



Owner's and Safety Manual

for Gasoline Chain Saws (pages 2 - 32)



DCS 9010

WARNING!

Read and understand this Owner's and Safety Manual. Always follow safety precautions in the Owner's and Safety Manual. Improper use can cause serious injury!
The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Preserve this Manual carefully!

ATTENTION!

Suivez toujours les conseils de sécurité du présent manuel d'emploi et de sécurité.
Une utilisation incorrecte de la tronçonneuse peut entraîner des blessures graves!
Conservez avec soin ce manuel!
Les gaz d'échappement émis par ce produit contiennent des produits chimiques connus par l'Etat de Californie pour provoquer le cancer, des défauts de naissance ou autres dommages de reproduction.
Lisez et comprenez ce manuel.

WARNING !

Careless or improper use of this product can cause serious or even fatal injury.

Before operating a chain saw or other MAKITA products it is important that you read, fully understand and carefully follow the instructions outlined in this manual. Kickback may cause severe or fatal injury and is one of many potential dangers in operating a chain saw. Kickback and other safety related precautions are described in detail within this manual. Additional manuals are available from MAKITA U.S.A., INC., 14930-C Northam Street, La Mirada, CA 90638-5753, USA, Telephone: (714) 522 80 88 and MAKITA CANADA INC., 1950 Forbes Street, Whitby, Ontario, L1N 7B7, Canada, Telephone: (905) 571 22 00.

This product complies with: American National Standard Institute B 175.1-1991 chain saw safety standard.
Canadian Standards Association Z62.1-95 chain saw safety standard.

Society of Automotive Engineers

SAEJ 335-Jun 95 „Multiposition small engine exhaust system fire ignition suppression”

With the purchase of this chain saw you have chosen a German quality product. Important instructions for the assembly and operation of this saw are given in this manual. For your own safety, we ask you to read the accident prevention instructions very carefully before putting your chain saw into operation, as incorrect handling can, despite all precautions, lead to accidents. With a little care and attention you will have good service and lasting satisfaction from this first-rate product. The following industrial property rights apply: US 5411382, EP 0440827, EP0560201, GBM 8909508, GBM 8913638, GBM 9203378.



MAKITA DCS 9010

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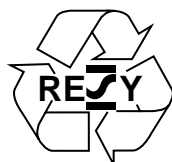
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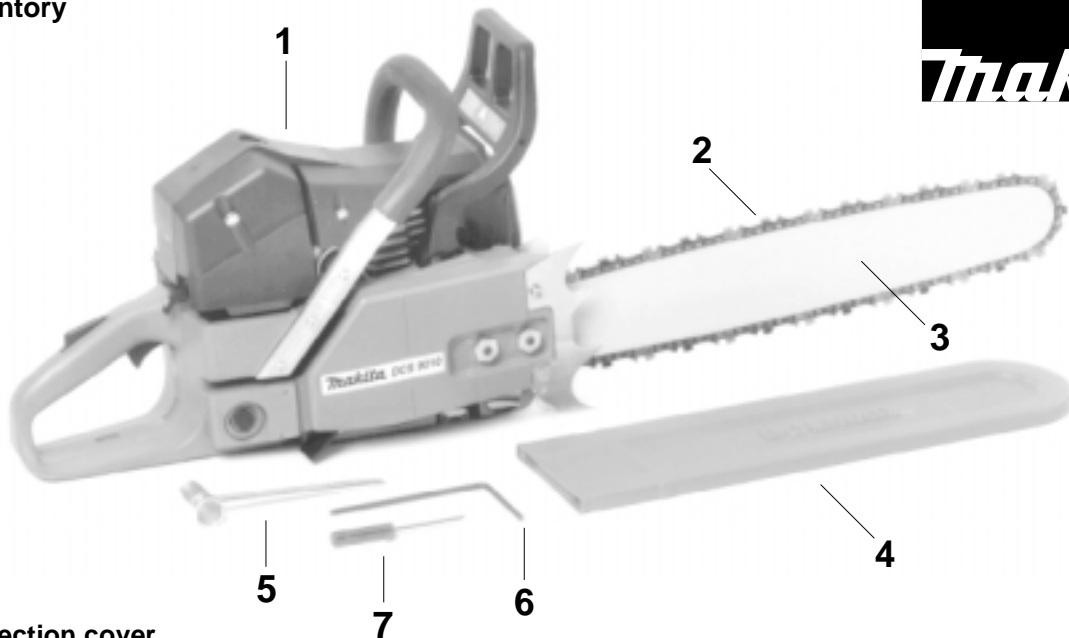
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The MAKITA DCS 9010 will be delivered in a protective cardboard box to prevent transport damage. Cardboard is a basic raw material and is consequently reuseable or suitable for recycling (waste paper recycling).



Delivery inventory



- 1 Chain saw
- 2 Saw chain
- 3 Guide bar
- 4 Chain protection cover
- 5 Universal wrench
- 6 Wrench
- 7 Screw driver for carburetor adjustment
- 8 Owner's and Safety Manual (not shown)

In case one of the parts listed should not be included in the delivery inventory, please consult your sales agent.

Symbols

You will notice the following symbols on the chain saw and in the Owner's and Safety Manual:



Read Owner's and Safety Manual and follow the warning and safety precautions!



Particular care and caution!



Forbidden!



Wear protective helmet, eye and ear protection!



No smoking!



No open fire!



On/Off (I/O) switch



Press starting valve



Engine - manual start



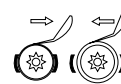
Choke lever



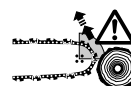
Stop engine!



Wear protective gloves!



Chain brake



Caution, kickback!



Fuel and oil mixture



Carburetor adjustment



Chain oil fill/oil pump



Working in winter



First aid



Recycling

Further symbols see page 5.

Safety precautions for chain saw operators

While operating the chain saw please observe the following rules:

- a) Contact of the guide bar nose with any object should be avoided.
- b) Tip contact may cause the guide bar to move suddenly upward and backward, which may cause serious or fatal injury.
- c) Always operate the chain saw with both hands.

WARNING!

Read and follow all safety precautions in the Instruction Manual. Failure to follow instructions could result in serious injury. It is recommended to lend the chain saw only to people who are experienced in working with chain saws. Always hand over the Owner's and Safety Manual.

WARNING!

This chain saw is capable of severe kickback that could result in serious injury to the operator. Do not operate this chain saw unless you have extraordinary cutting needs and experience in and special training for dealing with kickback. Chain saws with significantly reduced kickback potential are available.

WARNING!

Kickback may occur when the nose or tip of the guide bar touches an object, or when the wood closes in and pinches the saw chain in the cut. This contact may abruptly stop the **saw chain** and in some cases may cause a lightning fast reverse **reaction**, kicking the guide bar up and back towards the user, or push the guide bar back towards the operator. **Kickback** may cause you to lose control of the saw.

As a chain saw user, you can take several steps to reduce the risk of a kickback and potential injury.

- A. With a basic understanding of kickback, you can reduce or eliminate the element of surprise. It is a sudden surprise that contributes to accidents.
- B. Keep a good firm grip on the saw with both hands, your right hand on the rear grip and your left hand on the tubular handle, when the engine is running. Use a firm grip with thumbs and fingers encircling the chain saw handles. A firm grip can neutralize kickback and help you maintain control of the saw. Don't let go!
- C. Make sure that the area in which you are cutting is free from obstructions. Do not let the nose of the guide bar contact the log, branch, or any other obstructions which could be hit while you are operating the saw.
- D. Do not overreach or cut above shoulder height.
- E. Follow manufacturer's sharpening and maintenance instructions for the saw chain.
- F. Only use replacement bars and chains specified by the manufacturer or the equivalent.

Additional safety precautions

The following additional safety precautions should be observed by all users of chain saws:

1. Do not operate a chain saw when you are fatigued.
2. Use safety footwear; snug-fitting clothing; protective gloves; and eye, hearing, and head protection devices.
3. Use caution when handling fuel. Move the chain saw at least 10 feet (3 m) from the fueling point before starting the engine.
4. Do not allow other persons to be near the chain saw when starting or cutting with the chain saw. Keep bystanders and animals out of the work area.
5. Do not start cutting until you have a clear work area, secure footing, and a planned retreat path from the falling tree.
6. Keep all parts of your body away from the saw chain when the engine is running.
7. Before you start the engine, make sure that the saw chain is not contacting anything.
8. Carry the chain saw with the engine stopped, the guide bar and saw chain to the rear, and the muffler away from your body.
9. Do not operate a chain saw that is damaged, is improperly adjusted, or is not completely and securely assembled. Be sure that the saw chain stops moving when the throttle control trigger is released.
10. Shut off the engine before setting it down.
11. Use extreme caution when cutting small size brush and saplings because slender material may catch the saw chain and be whipped toward you or pull you off balance.
12. When cutting a limb that is under tension be alert for springback so that you will not be struck when the tension on the wood fibers is released.
13. Keep the handles dry, clean, and free of oil or fuel mixture.
14. Operate the chain saw only in well-ventilated areas.
15. Do not operate a chain saw in a tree unless you have been specifically trained to do so.
16. All chain saw service, other than the items listed in the Owner's Manual maintenance instructions, should be performed by MAKITA. (For example, if improper tools are used to remove the flywheel or if an improper tool is used to hold the flywheel in order to remove the clutch structural damage to the flywheel could occur and could subsequently cause the flywheel to burst.)
17. When transporting your chain saw, use the chain protection cover.
18. Low kickback bars and low kickback chains are designed to reduce the risk of kickback injury. Ask your MAKITA dealer about these devices.

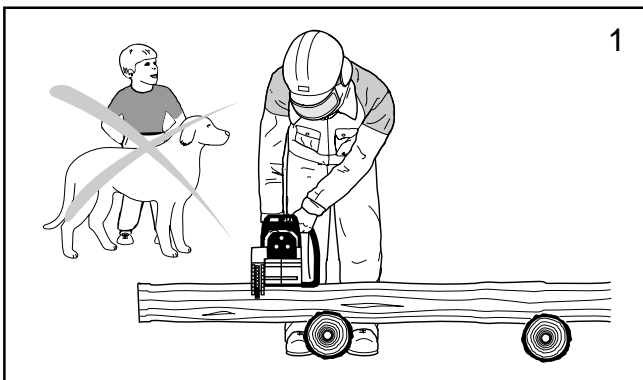
General Safety Precautions

The use of any chain saw may be hazardous. At full throttle chain speed can reach 45 mph (20 m/s). It is important that you read; fully understand and observe the following safety precautions and warnings. Read the Owner's Manual and the safety instructions periodically.

WARNING !

Reactive forces, including kickback, can be dangerous. Careless or improper use of any chain saw may cause serious or fatal injury.

Have your MAKITA dealer show you how to operate your chain saw. Observe all applicable local safety regulations, standards and ordinances.



WARNING!

Minors should never be allowed to use a chain saw.

Bystanders, especially children and animals should not be allowed in the area where a chain saw is in use (fig. 1).

Never let the saw run unattended.

Store it in a locked place away from children. Fill the fuel tank to 7/8 th full (see storing the saw).

Do not lend your chain saw without this Owner's Manual. Be sure that anyone using your saw understands the information given.

Proper use of a chain saw involves

1. the operator
2. the saw
3. the use of the saw.

Description of symbols used on chain saws:

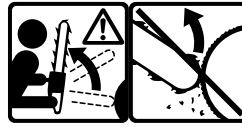


Z 62.1-95
Class 1A

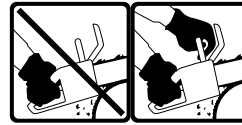
Compliance with
CSA -Standards

ANSI B175.1-1991

Compliance with
ANSI -Standards



Contact of the guide bar tip with any object should be avoided! Tip contact may cause the guide bar to move suddenly upward and backward, which may cause serious injury!

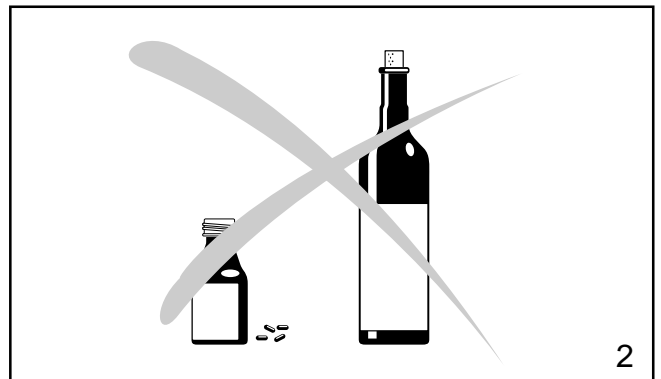


Always use two hands when operating the chain saw!

The operator

Physical Condition

You must be in good physical condition and mental health and not under the influence of any substance (drugs, alcohol), which might impair vision, dexterity or judgment.



WARNING !

Prolonged use of chain saws exposing the operator to vibrations may produce Whitefinger disease (Raynaud's phenomenon). This phenomenon reduces the hand's ability to feel and regulate temperature, produces numbness and burning sensations and may cause nerve and circulation damage and tissue necrosis.

All MAKITA saws are therefore provided with an antivibration system which is essential for those using chain saws on a regular or sustained basis. Antivibration systems do not guarantee that you will not sustain Whitefinger disease, however, they reduce this danger considerably. Nevertheless, continual and regular users should observe their hands and fingers and in case of any abnormal symptoms, seek medical advice immediately.

Proper clothing

Clothing must be sturdy and snug-fitting, but allow complete freedom of movement. Avoid loose-fitting jackets, scarfs, neckties, jewelry, flared or cuffed pants, or anything that could become entangled with the saw or brush. Wear overalls or jeans with a reinforced cutting resistant insert (fig. 3).

Protect your hands with gloves when handling saw and saw chain. Heavy-duty, nonslip gloves improve your grip and protect your hands.



Good footing is most important in chain saw work. Wear sturdy boots with nonslip soles. Steel-toed safety boots are recommended.

Proper eye protection is a must. Non-fogging, vented goggles and a face screen is recommended. Their use reduces the risk of eye and facial injury.

Wear an approved safety hard hat to protect your head. Chain saw noise may damage your hearing. Always wear noise protection equipment (ear plugs or ear muffs) to protect your hearing.

Continual and regular users should have their hearing checked regularly.



The saw

Parts of the chain saw: illustrations and description of parts see page 16.

WARNING !

Never modify a chain saw in any way. Only attachments supplied by MAKITA or expressly approved by MAKITA for use with the specific saw are authorized.

WARNING !

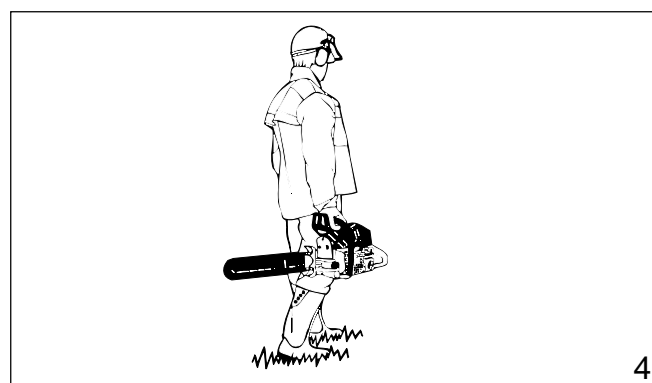
Bow guide bars substantially increase the potential for kickback and severe or fatal injury due to the greater kickback zone of the bow design. Bow guide bars are **not recommended** for use on MAKITA chain saws nor are they approved by the ANSI B 175.1-1991 chain saw safety standard.

The use of the saw

Transporting the chain saw

WARNING!

Always stop the engine before putting a chain saw down or carrying it. Carrying a chain saw with the engine running is extremely dangerous. Accidental acceleration of the engine can cause the chain to rotate. Avoid touching the hot muffler.



By hand: When carrying your saw by hand, the engine must be stopped and the saw must be in the proper position.

The chain protection cover should be over the chain and the guide bar must point backwards. When carrying your saw the bar should be behind you (fig. 4).

By vehicle: When transporting in a vehicle, keep chain and bar covered with the chain guard. Properly secure your saw to prevent turnover, fuel spillage and damage to the saw. Make sure the saw is not exposed to heat or sparks.

Chain saw operating instructions

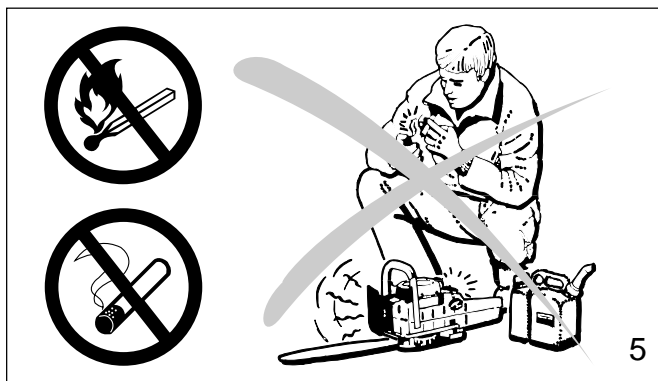
For assembly follow the procedure in the appropriate section "Mounting Guide Bar and Chain" of this manual. MAKITA chain, guide bar and sprocket must match each other (see the appropriate section in this manual).

WARNING!

Proper tension of the chain is extremely important. In order to avoid false setting the tensioning procedure must be followed as described in this manual. Always make sure the hexagonal nut(s) for the sprocket guard is (are) tightened securely after tensioning the chain. Check chain tension once more after having tightened the nuts and thereafter at regular intervals (always before starting to work). If the chain becomes loose while cutting, shut off the engine and then tighten. Never try to tighten the chain while the engine is running!

Fueling

Your MAKITA saw uses on oil-gasoline mixture for fuel (see chapter "Fuel" of this manual).



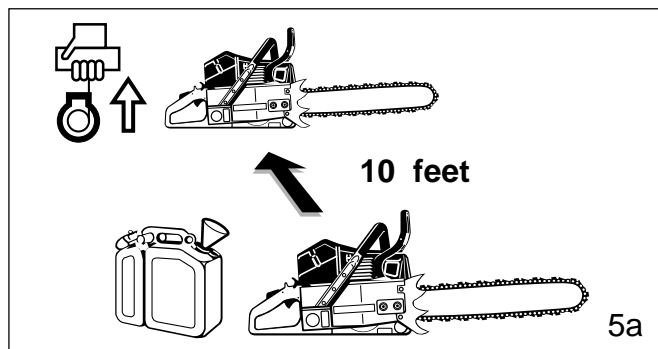
WARNING!

Gasoline is an extremely flammable fuel. Use extreme caution when handling gasoline or fuel mix. Do not smoke or bring any sparks or flame near the fuel (fig. 5).



Fueling instructions

Fuel your chain saw in well ventilated areas or outdoors. Always shut off the engine and allow it to cool before refueling. Select bare ground for fueling and move the chain saw at least 10 feet (3 m) from fueling spot before starting the engine (fig. 5a).

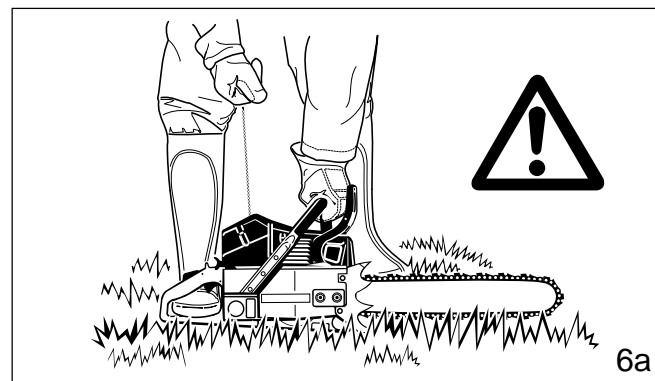
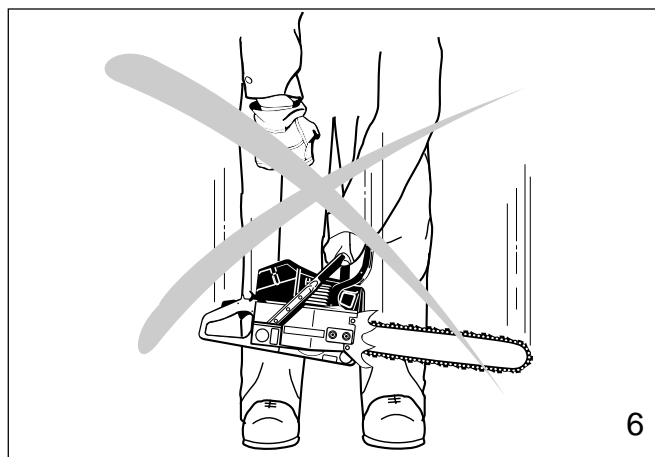


Wipe off any spilled fuel before starting your saw and check for leakage.

Check for fuel leakage while refueling and during operation. If fuel or oil leakage is found, do not start or run the engine until leak is fixed and spilled fuel has been wiped away. Clothing with fuel on it has to be changed immediately (this is a danger to your life!). Avoid skin contact with fuel. Never loosen or remove the cap of the fuel tank while the engine is running.

Starting

Do not drop start. This method is very dangerous because you may lose control of the saw (fig. 6).



Place the chain saw on firm ground or other solid surface in an open area. Maintain a good balance and secure footing. Place your right foot through the rear handle opening and firmly grasp the front handle with your left hand (fig. 6a).

Be absolutely sure that guide bar and chain are clear of you or all other obstructions and objects, including the ground, because when the engine starts in semi-throttle position, engine speed will be fast enough for the clutch to engage the sprocket and turn the chain which may cause a kickback.

Never attempt to start the saw when the guide bar is in a cut or kerf.

When you pull the starter grip, don't wrap the starter rope around your hands. Do not allow the grip to snap back, but guide the starter rope slowly back to permit the rope to rewind properly. Failure to follow this procedure may result in injury to hand or fingers and may damage the starter mechanism.

Important adjustments

WARNING!

At correct idle speed, chain should not turn. For directions to adjust idle speed, see the appropriate section of this Owner's Manual.

Do not use a saw with incorrect idle speed adjustment. Adjust the idle speed yourself according to the appropriate section of this Owner's Manual.

Have your MAKITA dealer check your saw and make proper adjustments or repairs.

Check the saw chain tension frequently, especially just after installing a new chain. New chains may stretch more during their initial use. A properly adjusted saw chain can be pulled freely around the guide bar by hand without sagging. Always stop the engine and wear gloves when checking or adjusting the chain tension.

Working conditions

Operate your chain saw only outdoors. Operate the saw under good visibility and daylight conditions only.

WARNING!

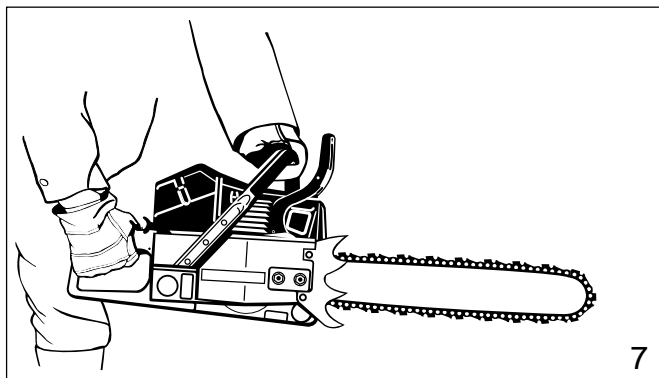
Take extreme care in wet and freezing weather (rain, snow, ice). Put off the work when the weather is windy, stormy or rainfall is heavy. Clear the area where you are working.

WARNING!

Avoid stumbling on obstacles such as stumps, roots or rocks and watch out for holes or ditches. Be extremely cautious when working on slopes or uneven ground. There is increased danger of slipping on freshly debarked logs.

Cutting instructions

Always hold the saw firmly with both hands when the engine is running. Place your left hand on the tubular handle and your right hand on grip and throttle lever. Left-handers should follow these instructions too.

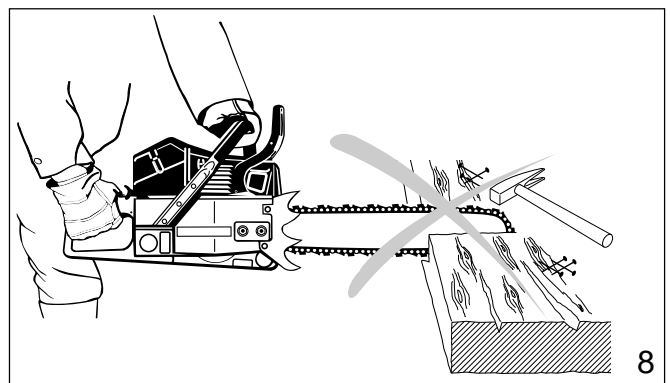


Wrap your fingers tightly around the handles, keeping the handles cradled between your thumb and forefinger (fig. 7). With your hands in this position, you can best oppose and absorb the push, pull and kick-back forces of your saw without having it slip out of your grip (see section of reactive forces). Make sure your chain saw handle and grip are in good condition and free of moisture, pitch, oil or grease.

Always start a cut with the chain running at full speed and the spike bar in contact with the wood.

WARNING!

Never use the saw with one hand. You cannot control reactive forces (see pages 9 to 11) and may lose control of the saw.



WARNING!

Do not operate your chain saw in semi-throttle position. Cutting in this position does not permit the operator proper control of the saw or chain speed.

WARNING!

Never come too close to a rotating chain with your hands or body.

WARNING!

Do not cut any material other than wood or wooden objects.

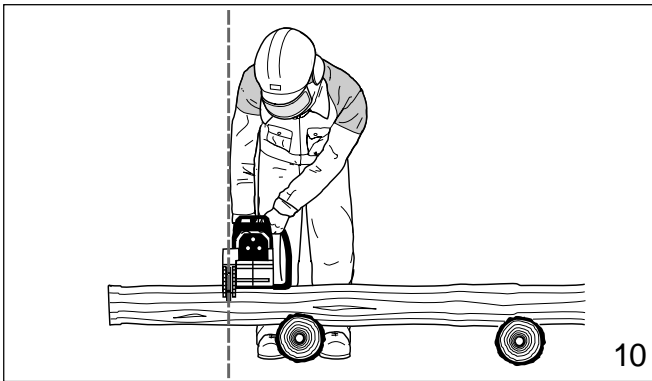
Use your chain saw for cutting only. It is not designed for prying or shoveling away limbs, roots or other objects.

When sawing, make sure that the saw chain does not touch any foreign materials such as rocks, nails and the like (fig. 8). Such objects may be flung off, damage the saw chain or cause the saw to kickback.



In order to keep control of your saw, always maintain a firm foothold. Never work on a ladder, in a tree or on any other insecure support. Never use the saw above shoulder height (fig. 9).

Position the chain saw in such a way that your body is



clear of the cutting attachment whenever the engine is running (fig. 10).

Don't put pressure on the saw when reaching the end of a cut. The pressure may cause the bar and rotating chain to pop out of the cut or kerf, go out of control and strike the operator or some other object. If the rotating chain strikes some other object a reactive force (see pages 10 to 12) may cause the chain to strike the operator.

Reactive forces during the cut, including kickback

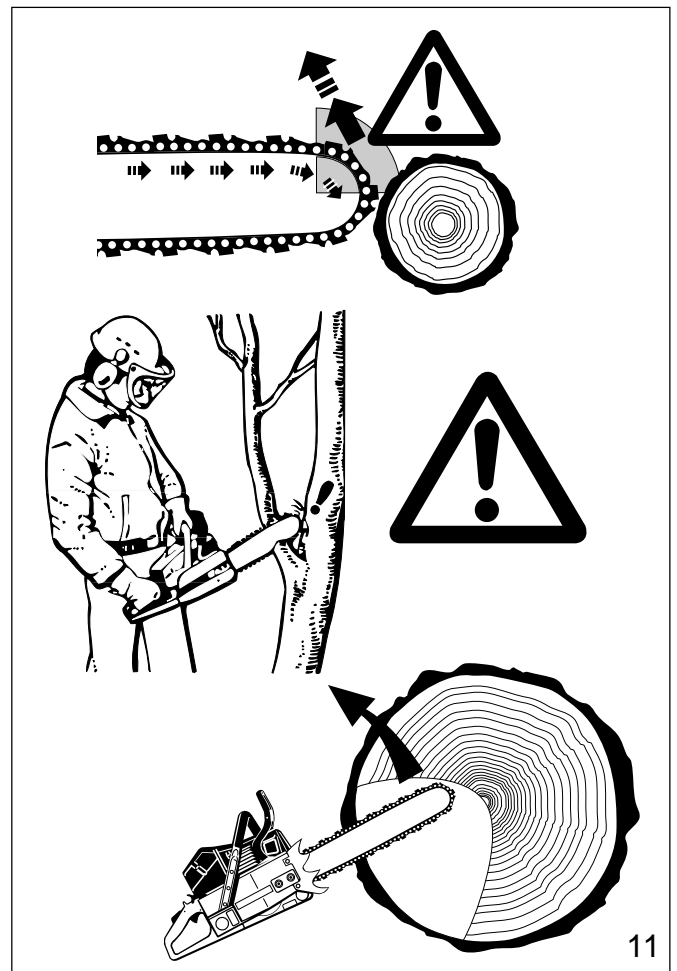
WARNING!

Reactive forces, that may occur during any cut are kickback, pushback and pull-in. Reactive forces can be dangerous! In any chain saw, the powerful force used to cut wood can be reversed (and work against the operator).

If the rotating chain is suddenly stopped by contact with any solid object like a log or branch or is pinched, the reactive forces instantly occur. These reactive forces may result in loss of control which may, in turn, cause serious or fatal injury. An understanding of the causes of these reactive forces may help you avoid loss of control.

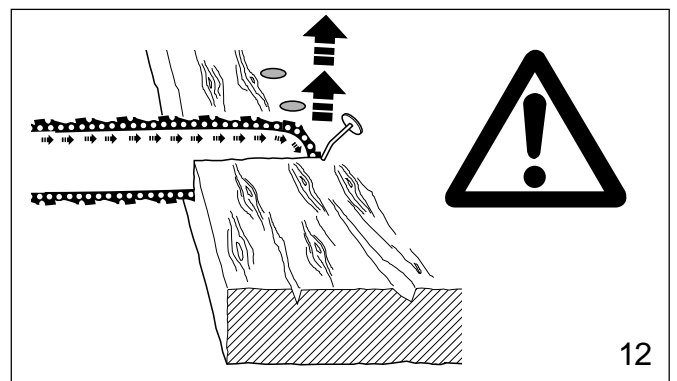
The most common reactive forces are

- kickback,
- pushback,
- pull-in.



Kickback:

Kickback occurs when the upper quadrant of the bar nose contacts a solid object in the wood or is pinched (fig. 11). The reaction of the cutting force of the chain causes a rotational force of the chain saw in the direction opposite to the chain movement, mainly in the plane of the bar. This may fling the bar in an uncontrolled arc towards the operator.



This reaction can occur in a fraction of a second and under some circumstances, cause the guide bar and chain to strike the operator with enough force to cause severe or fatal injury. It may also occur during limbing. It also occurs when the nose of the guide bar is pinched unexpectedly, unintentionally contacts solid material in the wood (fig.12) or is incorrectly used to begin a plunge or boring cut.

The greater the force of the kickback reaction, the more difficult it becomes for the operator to control the saw.

Many factors influence the occurrence and force of the kickback reaction. The type of bar and saw chain you use is a factor in the force of the kickback reaction.

The speed of contact at which the cutter contacts the object.

Kickback force increases with the rate of impact.

The contact angle between the nose of the bar and the foreign object (fig. 11).

Kickback is most pronounced in the upper quadrant of the bar nose.

MAKITA chain types are designed to reduce kickback forces.

The depth gauges:

Improper lowering of the depth gauges also increases the risk of a kickback.

Saw chain cutter sharpness:

WARNING!

A dull improperly sharpened chain may increase the risk of kickback. Always cut with a properly sharpened chain.

Devices for reducing the risk of kickback injury

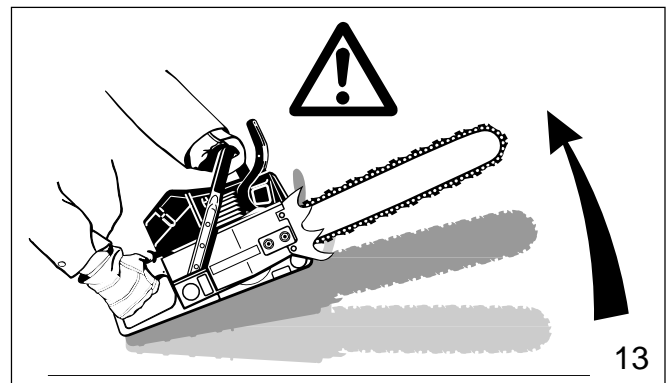
MAKITA have developed a special chain brake to reduce the risk of kickbacks.

This chain brake increases the safety factor on the job, e.g. when the saw suddenly kicks upwards the chain stops rotating within a fraction of a second. A deflection guard on the disengaging lever of the chain brake and a loop rear handle ensure that the operator's hands are fully protected at all times.

Kickback tendency increases as the radius or size of the guide bar nose increases. MAKITA have developed guide bars with small nose radius, to reduce the kickback tendency.

WARNING!

No chain brake prevents kickback. These brakes are designed only to stop the chain, if activated. To ensure a proper operation of the chain brake, it must be properly maintained. Furthermore, there must be a sufficient distance between the operator and the bar to ensure that the chain brake has sufficient time to activate and stop the chain before potential contact with the operator.



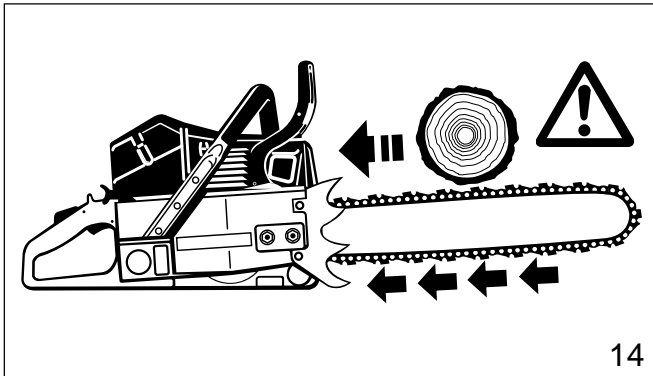
To avoid kickback

The best protection from personal-injury that may result from kickback is to avoid kickback situations:

1. Hold the chain saw firmly with both hands and maintain a secure grip.
2. Be aware of the location of the guide bar nose at all times.
3. Never bring the nose of the guide bar in contact with any object. Do not cut limbs with the nose of the guide bar. Be especially careful with small, tough limbs, small size brush and saplings which may easily catch the chain.
4. Don't overreach.
5. Don't cut above shoulder height.
6. Begin cutting and continue at full throttle.
7. Cut only one log at a time.
8. Use extreme caution when re-entering a previous cut.
9. Do not attempt plunge cuts (see page 13) if you are not experienced with these cutting techniques.
10. Be alert for shifting of the log or other forces that may cause the cut to close and pinch the chain.
11. Maintain saw chain properly. Cut with a correctly sharpened, properly tensioned chain at all times.
12. Stand to the side of the cutting path of the chain saw.

Pushback:

Pushback occurs when the chain on the top of the bar is suddenly stopped when it is pinched, caught or encounters a foreign object in the wood. The reaction of the chain drives the saw straight back toward the operator causing loss of saw control. Pushback frequently occurs when the top of the bar is used for cutting (fig. 14).



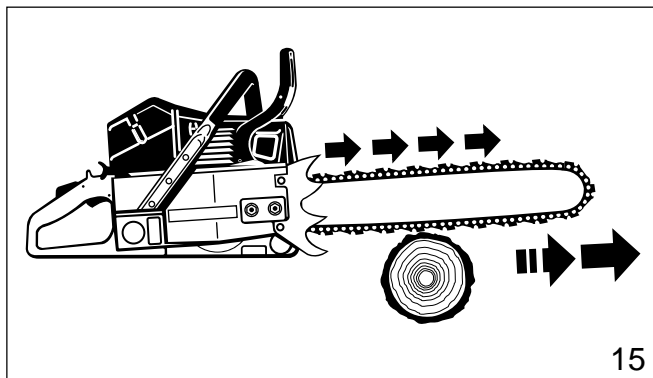
To avoid pushback

1. Be alert to forces or situations that may cause material to pinch the top of the chain.
2. Do not cut more than one log at a time.
3. Do not twist the saw when withdrawing the bar from a plunge cut or under buck cut (figures 25 to 27 and 33, pages 13 and 15), because the chain can pinch.

Pull-in:

Pull-in occurs when the chain on the bottom of the bar is suddenly stopped. The chain on the bottom of the bar stops when it is pinched, caught or encounters a foreign object in the wood (see fig. 15). The reaction of the chain pulls the saw forward, causing the operator to lose control.

Pull-in frequently occurs when the spike bar of the saw is not held securely against the tree or limb and when the chain is not rotating at full speed before it contacts the wood.



WARNING!

Use extreme caution when cutting small size brush and saplings which may easily catch the chain and pull you off balance.

To avoid pull-in

1. Always start a cut with the chain rotating at full speed and the spike bar in contact with the wood.
2. Pull-in may also be prevented by using plastic wedges to open the kerf or cut.

Cutting techniques

Felling

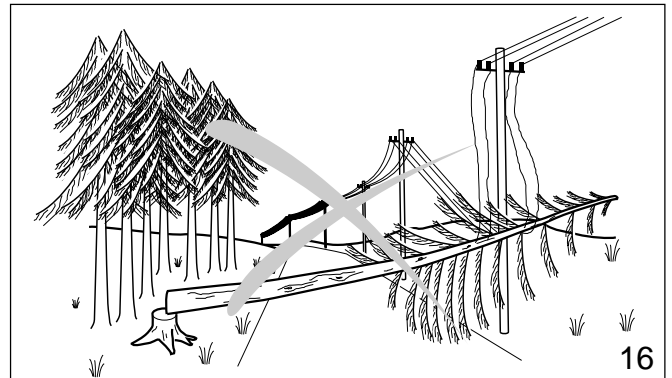
Felling is cutting down a tree.

Before felling a tree, consider carefully all conditions which may affect the direction of fall, including:

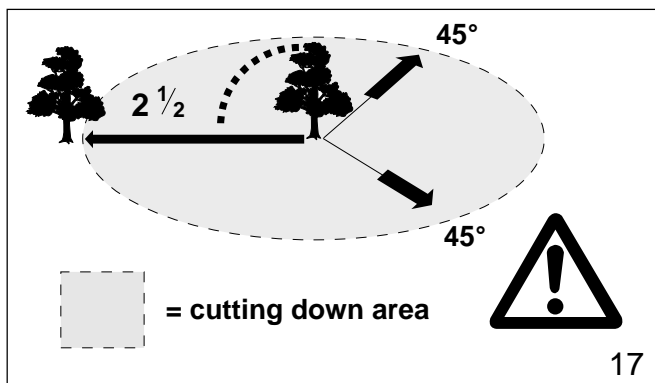
The intended direction of the fall.
The neutral lean of the tree.
Any unusually heavy limb structure.
Surrounding trees and obstacles.
The wind direction and speed.

WARNING!

Always observe the general condition of the tree. Look for decay and rot in the trunk. If it is rotted inside, it could snap and fall toward the operator while being cut. Also look for broken or dead branches which could vibrate loose and fall on the operator. When felling on a slope, the operator should stand on the up-hill side.



When felling in the vicinity of roads, railways and power lines, etc., take extra precautions (see fig. 16). Inform the police, utility company or railway authority before beginning to cut.



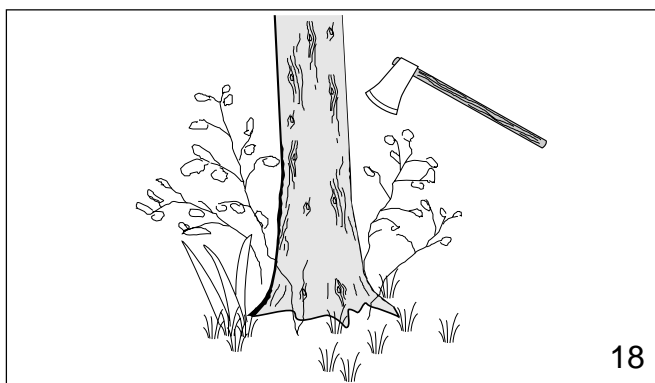
17

When felling, maintain a distance of at least $2\frac{1}{2}$ tree lengths from the nearest person (see fig. 17).

Note:

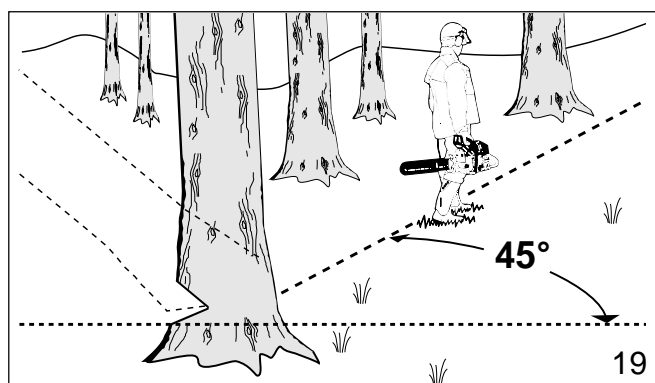
The noise of your engine may drown any warning call.

Felling instructions:



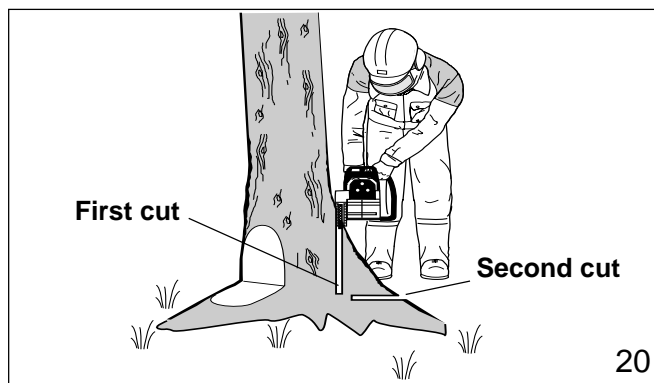
18

First clear the tree base and work area from interfering limbs and brush and clean its lower portion an axe (see fig. 18).



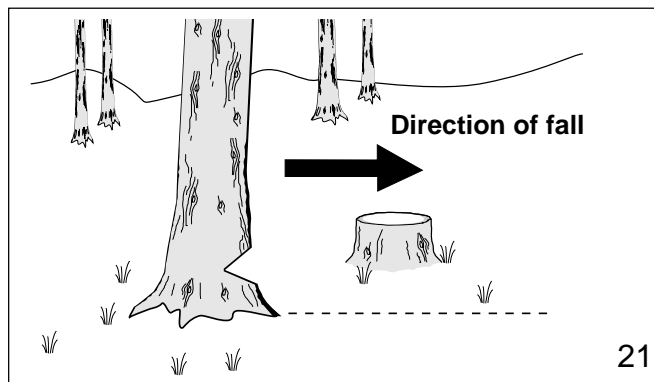
19

Then, establish a path of escape and remove all obstacles. This path should be opposite to the planned direction of the fall of the tree and at a 45° angle (fig. 19). An alternate path must also be selected. Place all tools and equipment a safe distance away from the tree, but not on the escape path.

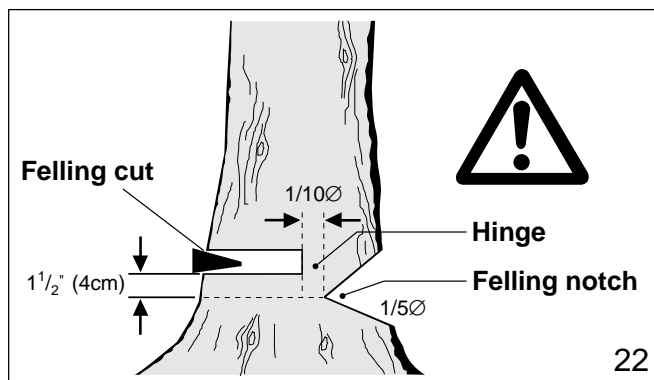


20

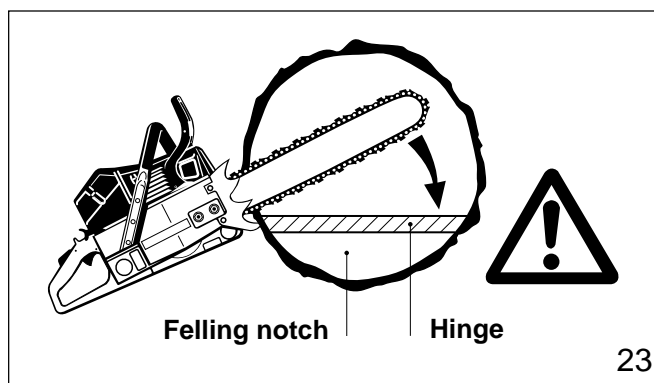
If the tree has large buttress roots, cut into the largest buttresses vertically first (horizontally next) and remove (fig. 20).



21



22



23

Then, determine the placement of the felling notch (fig. 21). The felling notch when properly placed determines the direction in which the tree will fall. It is made perpendicular to the line of fall and should be as close to the ground as possible. Cut the felling notch to a depth of about one-fifth to one-fourth of the trunk diameter (fig. 22). It should be in no case higher than it is deep. Make the felling notch very carefully.

Begin the felling cut slightly higher than the felling notch and on the opposite side of the tree (fig. 22). Then cut horizontally through towards the felling notch. Apply the chain saw with its spikes directly behind the uncut portion of wood and cut toward the notch (fig. 23). Leave approximately 1/10 of the tree diameter uncut! This is the hinge (fig. 23). Do not cut through the hinge because you could lose control of the direction of the fall. Drive wedges into the felling cut where necessary to control the direction of the fall. Wedges should be of wood, light alloy or plastic - never of steel, which can cause kickback and damage to the chain.

Always keep to the side of the falling tree. When the tree starts to fall, shut off the engine, withdraw the bar and walk away on the pre-planned escape path. Watch out for falling limbs.

WARNING!

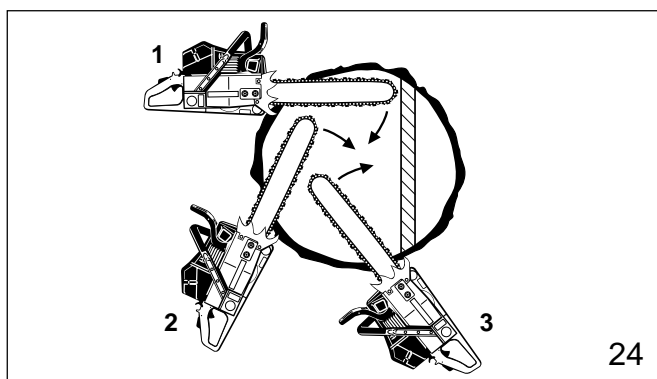
Be extremely careful with partially fallen trees which are poorly supported.

When the tree hangs or for some other reason does not fall completely, set the saw aside and pull the tree down with a cable winch, block and tackle or tractor. If you try to cut it down with your saw, you may be injured.

Sectioning Method

WARNING!

Felling a tree that has a diameter greater than the length of the guide bar requires use of either the sectioning or plunge-cut method. These methods are extremely dangerous because they involve the use of the nose of the guide bar and can result in kickback. Only properly trained professionals should attempt these techniques.



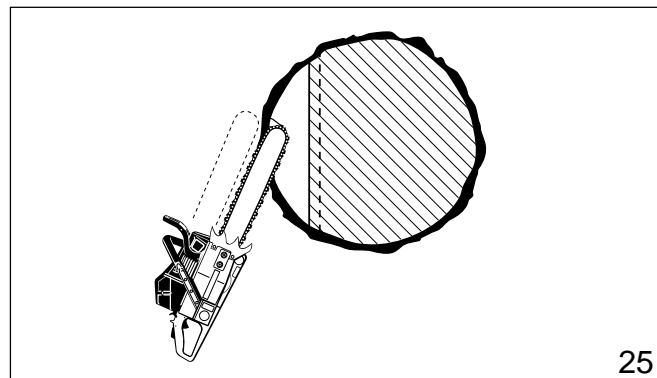
For the sectioning method (fig. 24) make the first cut with the guide bar fanning in toward the hinge. Then, using the bumper spike as a pivot, reposition the saw for the next cut. Avoid repositioning the saw more than necessary. When repositioning for the next cut, keep the guide bar fully engaged in the kerf to keep the felling cut straight. If the saw begins to pinch, insert a wedge to open the cut. On the last cut, do not cut the hinge.

Plunge-Cut Method

Timber having a diameter more than twice the length of the guide bar requires the use of the plunge-cut method before making the felling cut.

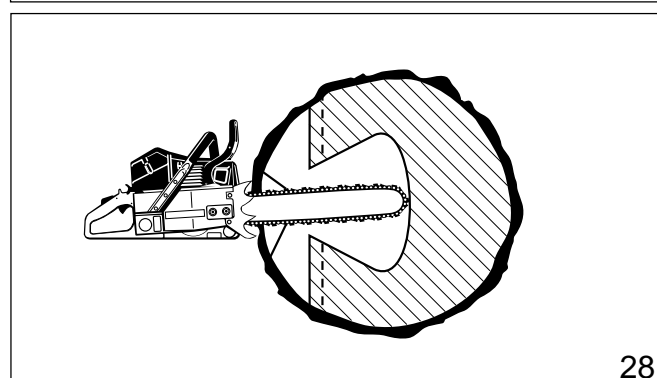
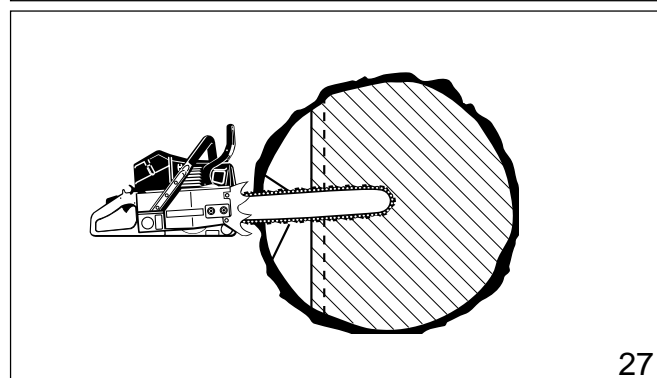
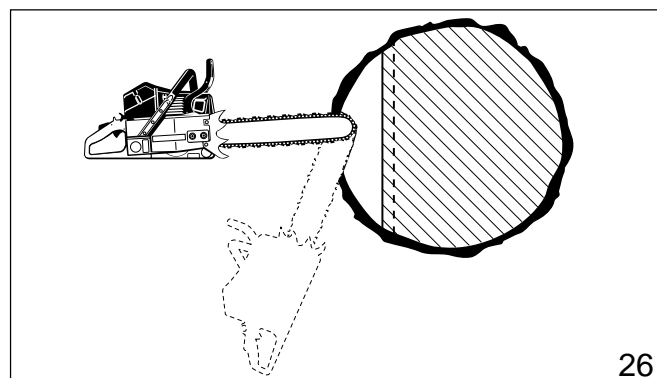
First, cut a large, wide notch. Make a plunge cut in the center of the notch.

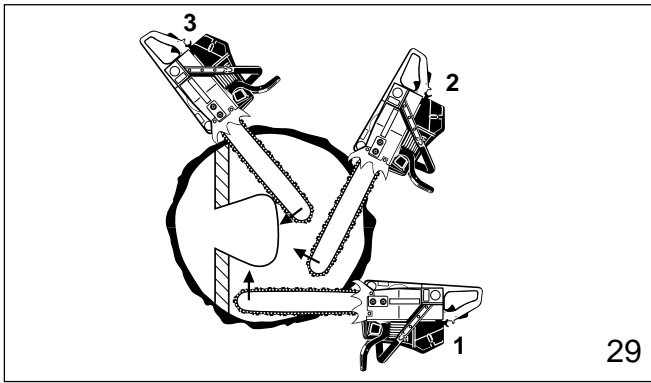
The plunge cut is made with the guide bar nose. Begin the plunge cut by applying the lower portion of the guide bar nose to the tree at an angle (fig. 25). Cut until depth of the kerf is about the same as the width of the guide bar (fig. 26). Next, align the saw in the direction



in which the recess is to be cut. With the saw at full throttle, insert the guide bar in the trunk (fig. 27).

Enlarge the plunge cut as shown in illustration (fig. 28)





WARNING!

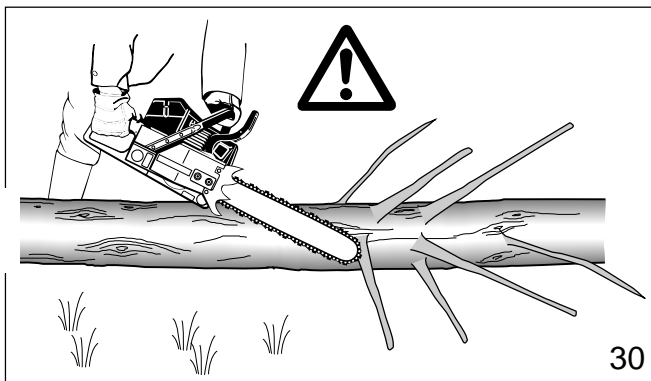
There is an extreme danger of kickback at this point. Extra caution must be taken to maintain control of the saw. To make the felling cut, follow the sectioning method described previously (fig. 29). If you are inexperienced with a chain saw plunge-cutting should not be attempted. Seek the help of a professional.

Limbing

Limbing is removing the branches from a fallen tree.

WARNING!

There is an extreme danger of kickback during the limbing operation. Do not work with the nose of the bar. Be extremely cautious and avoid contacting the log or other limbs with the nose of the guide bar. Do not stand on a log while limbing it - you may slip or the log may roll.



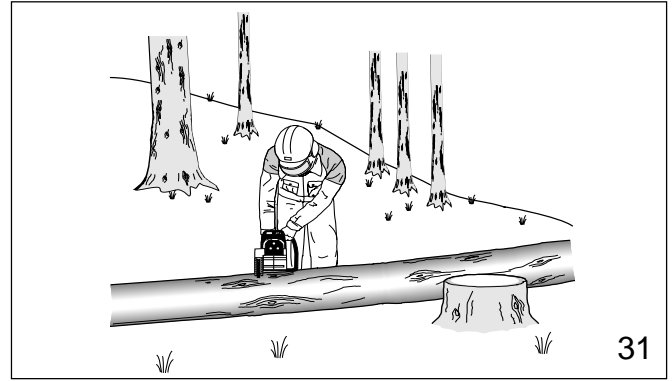
Start limbing by leaving the lower limbs to support the log off the ground (fig. 30). Always cut from the top of the limb. Do not underbuck freely hanging limbs. A pinch may result or the limb may fall, causing loss of control. If a pinch occurs, stop the engine and remove the saw, by lifting the limb.

WARNING!

Be extremely cautious when cutting limbs under tension. The limbs could spring back toward the operator and cause loss of control of the saw or injury to the operator.

Bucking

Bucking is cutting a log into sections.



WARNING!

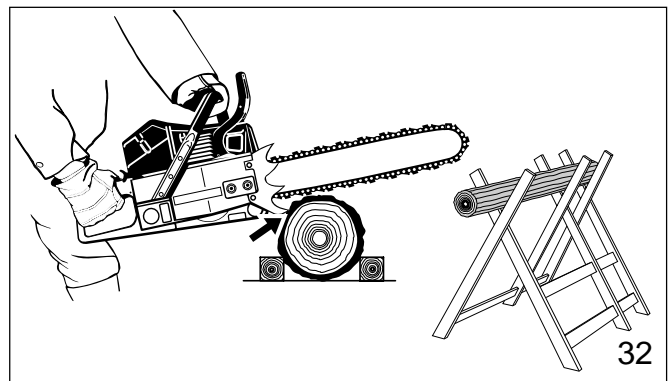
1. When bucking, do not stand on the log. Make sure the log will not roll down-hill. If on a slope, stand on the up-hill side of the log (see fig. 31). Watch out for rolling logs.

WARNING!

2. Cut only one log at a time.

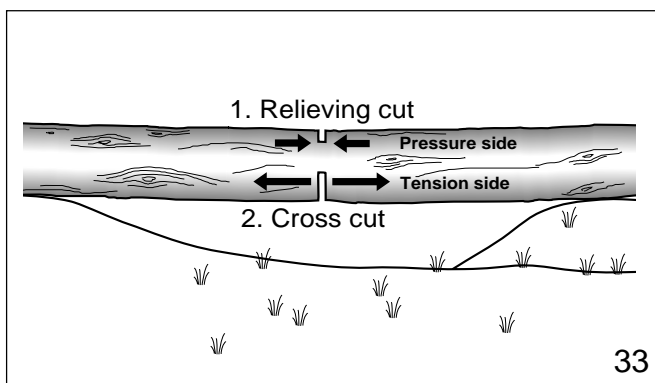
WARNING!

3. Shattered wood should be cut very carefully. Sharp splinters of wood may be caught and flung in the direction of the operator of the saw.

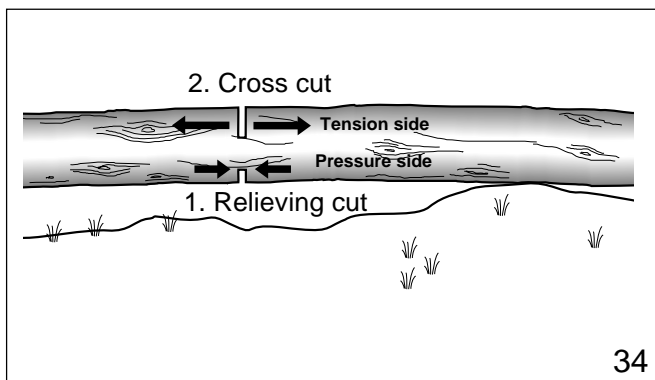


WARNING!

4. When cutting small logs, use a sawhorse (fig. 32). Never permit another person to hold the log. Never hold the log with your leg or foot.



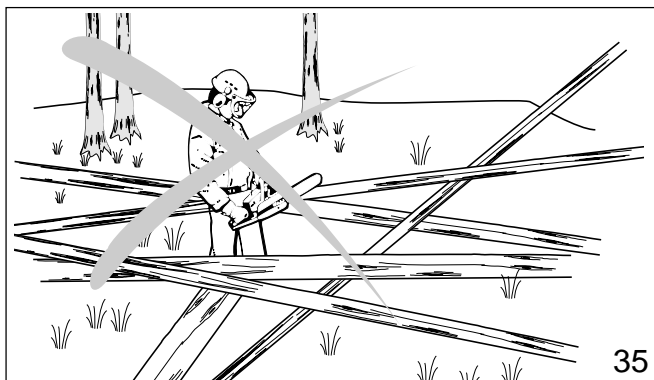
33



34

WARNING!

5. Logs under strain require special attention to prevent the saw from pinching. The first cut is made on the compression side to relieve the stress on the log (see fig. 33, 34). The bucking cut is then made as shown. If the saw pinches, stop the engine and remove it from the log.



35

WARNING!

6. Only properly trained professionals should work in an area where the logs, limbs and roots are tangled (i. e. a blowdown area, fig. 35). Working in blowdown areas is extremely hazardous.

WARNING!

7. Drag the logs into a clear area before cutting. Pull out exposed and cleared logs first.

Maintenance and Repair

Never operate a chain saw that is damaged, improperly adjusted or not completely or securely assembled. Follow the maintenance and repair instructions in the appropriate section of this manual.

WARNING !

Always stop the engine and make sure that the chain is stopped before commencing any maintenance or repair work or cleaning the saw. Do not attempt any maintenance or repair work not described in this manual. Have such work performed by your MAKITA service shop only.

Maintaining and storing the saw

Keep the chain, bar and sprocket clean and lubricated; replace worn sprockets or chains.

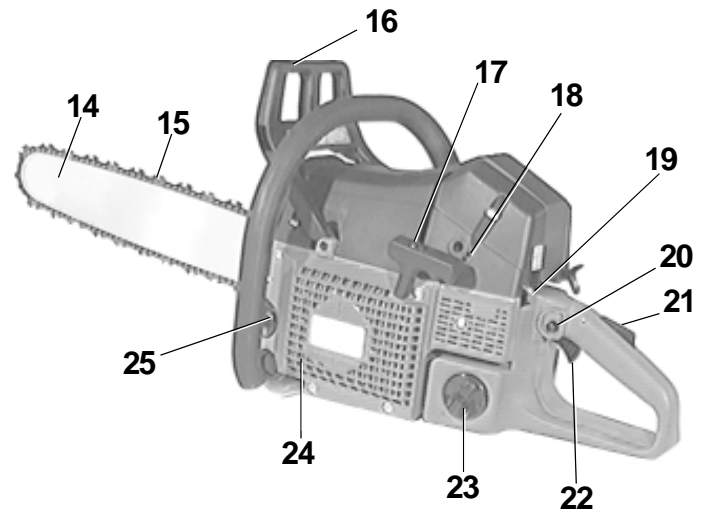
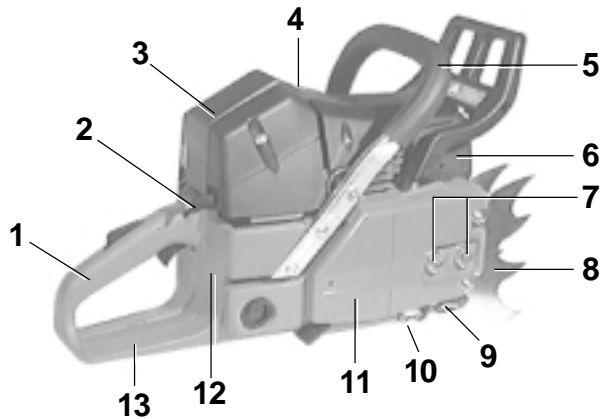
Keep the chain sharp. You can spot a dull chain when easy-to-cut wood becomes hard to cut and burn marks appear on the wood.

Keep the chain at proper tension. Tighten all nuts, bolts and screws except the carburetor adjustment screws after each use.

Keep spark plug and wire connection tight and clean.

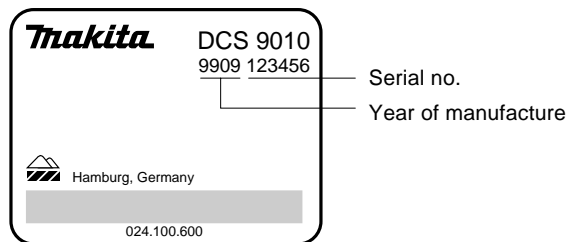
Store saws in a high or locked place, away from children.

Denomination of components



Identification plate

(example model DCS 9010)



Indicate when ordering spare parts!

- | | |
|---|--|
| 1 Handle | 13 Hand guard |
| 2 Choke | 14 Guide bar |
| 3 Cover for air filter / spark plug | 15 Chain |
| 4 Switch for use in winter | 16 Hand guard (release for chain brake) |
| 5 Tubular handle | 17 Starter grip |
| 6 Muffler with spark arrester screen | 18 Adjusting screws „H-T-L” for carburetor |
| 7 Fastening nuts | 19 ON/OFF switch |
| 8 Spike bar
(toothed stop for holding saw steady against wood) | 20 Stop knob for halfway throttle |
| 9 Chain catcher | 21 Safety locking button |
| 10 Adjusting screw for oil pump (bottom side) | 22 Throttle lever |
| 11 Sprocket guard | 23 Fuel tank cap |
| 12 Identification plate | 24 Fan housing with starting assembly |
| | 25 Oil tank cap |

Technical data

		DCS 9010
Stroke volume	cu. in (cm ³)	5.5 (90)
Bore	inch (mm)	2 (52)
Stroke	inch (mm)	1.6 (42)
Max. power at speed	hp / rpm	6.57 / 9,500
Max. torque at speed	ft lb / rpm	4.3 / 6,500
Limit speed	rpm	13,500
Idling speed	rpm	2,200
Coupling speed	rpm	3,600
Sound Pressure Level at the operator's ear at full load according to ANSI B 175.1/ CSA Z62.1	db(A)	105
Sound Pressure Level at the bystander's position (50ft/15 m distance) according to ANSI B 175.1	db(A)	80
Carburetor (diaphragm carburetor)	Type	TILLOTSON HS-295A (LC)
Ignition system	Type	electronic
Spark plug	Type	NGK BPMR 7A
Electrode gap	inch (mm)	.020 - .030 (0.5 -0.8)
or spark plug	Type	BOSCH WSR-6F
Fuel consumption at max. load per ISO 8893	kg/h	2.3
Specific consumption at max. load per ISO 8893	g/kWh	480
Fuel tank capacity	oz (l)	33,8 (1.0)
Chain oil tank capacity	oz (l)	13,5 (0.4)
Mixture ratio (fuel/two-stroke oil)		
- when using MAKITA oil		50:1
- when using other oils		40:1
Chain brake		engages manually or in case of kickback
Sprocket pitch	inch	3/8
Number of chain sprocket teeth	Z	7
Chain type (see the Extract from the spare-parts list)		
Pitch / Driving element strength	inch	3/8 / .058
Guide bar, length of a cut	inch	20 - 36
Guide-bar type (see the Extract from the spare-parts list)		
Weight (fuel tank empty, without chain and guide bar)	lbs oz	18 lbs 1 oz

WARNING:

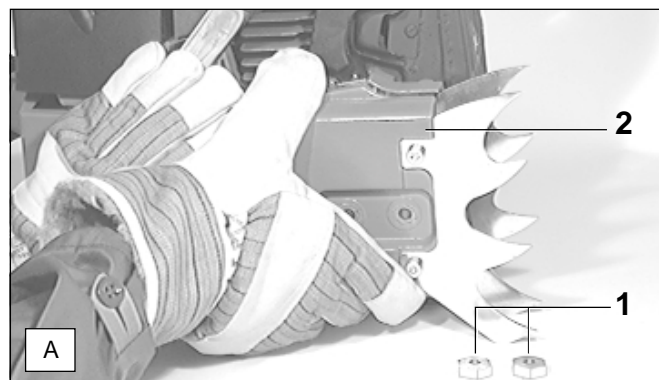
This chain saw is capable of severe kickback that could result in serious injury to the user. Do not operate this chain saw unless you have extraordinary cutting needs and experience and specialized training for dealing with kickback. Chain saws with significantly reduced kickback potential are available.

PUTTING INTO OPERATION

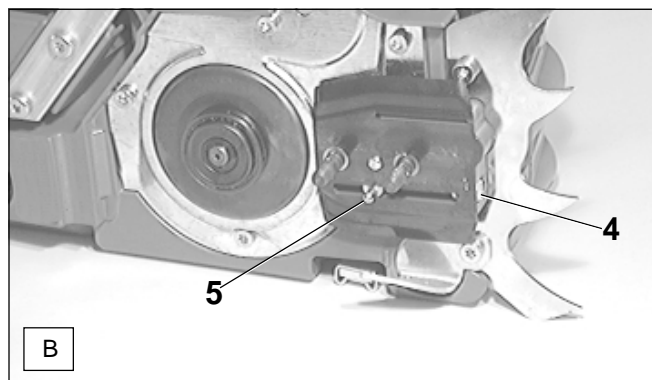
Mounting the guide bar and chain

Use the universal wrench delivered with the chain saw for the following works.

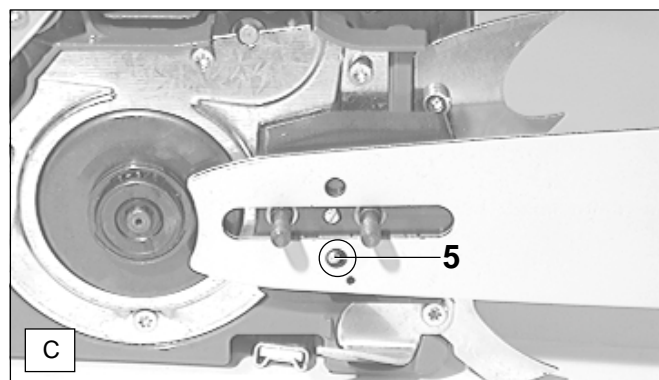
Put the chain saw on a stable surface and carry out the following steps for mounting the guide bar and chain:



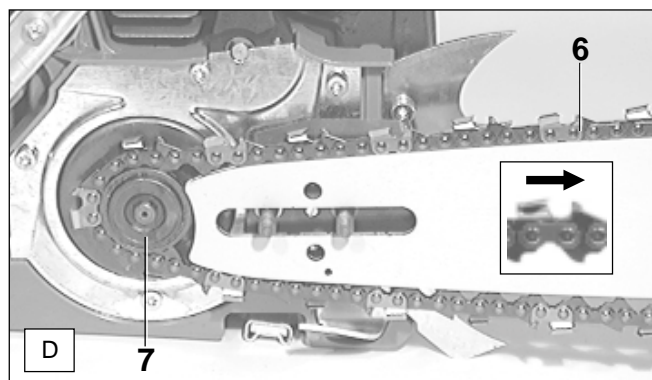
- Loosen the two fastening nuts (A/1).
- Pull off the sprocket guard (A/2).



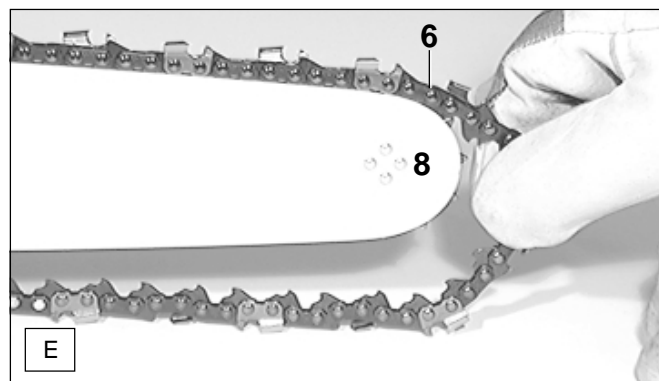
- Turn the chain adjusting screw (B/4) anti-clockwise until the pivot (B/5) is positioned approx. 2 cm in front of the left stop.



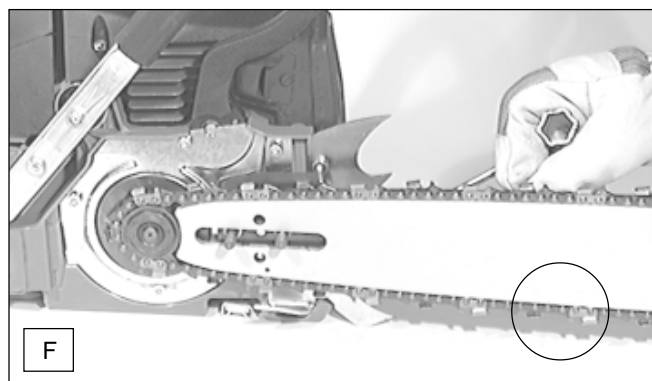
- Position the guide bar. Ensure the pivot (B/5, C/5) of the chain tightener is inserted into the bore (see circle) of the guide bar.



- Put the chain (D/6) onto the sprocket (D/7) and insert it into the guide groove of the guide bar. The cutting edges of the top side of the bar must be oriented in the direction of the arrow.



- Lead the chain (E/6) around the sprocket nose (E/8) of the guide bar.

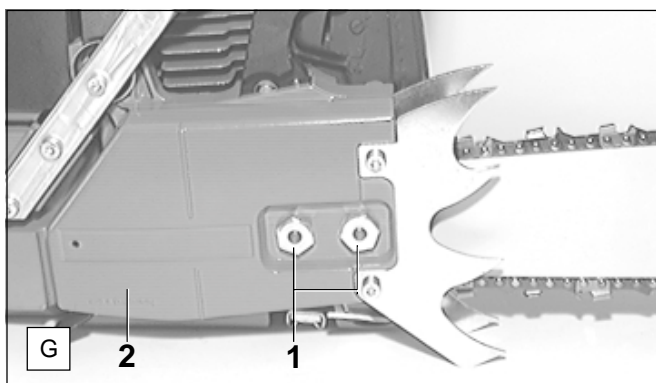


- Turn the chain tightener (B/4) to the right (clockwise) until the chain is in gear with the guide groove of the bottom side of the bar (see circle). Press the guide bar with your left hand against the casing.

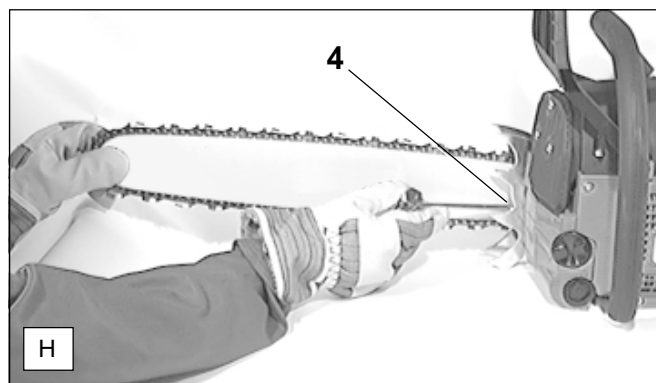


CAUTION: Before doing any work on the guide bar or chain, always switch off the engine and pull the plug cap off the spark plug (see "Replacing the spark plug"). Always wear protective gloves!

CAUTION: Start the chain saw only after having assembled it completely and inspected!



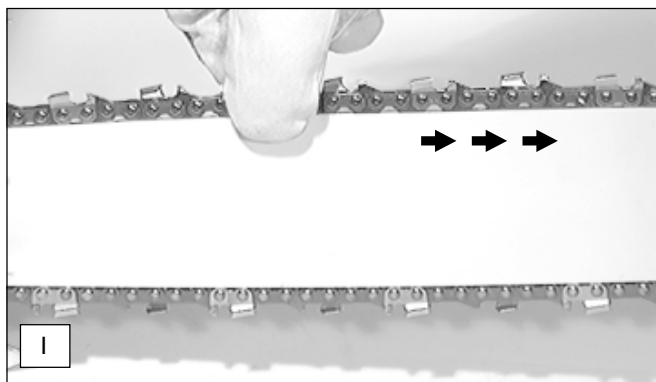
- Position the sprocket guard (G/2).
Manually tighten the two fastening nuts (G/1).



Tightening the chain

- Slightly lift the end of the guide bar and turn the chain adjusting screw (H/4) to the right (clockwise) until the chain rests against the bottom side of the guide bar.
- Continue to lift the guide bar end and firmly tighten the two fastening nuts (G/1) by means of the universal wrench.

Checking the chain tension



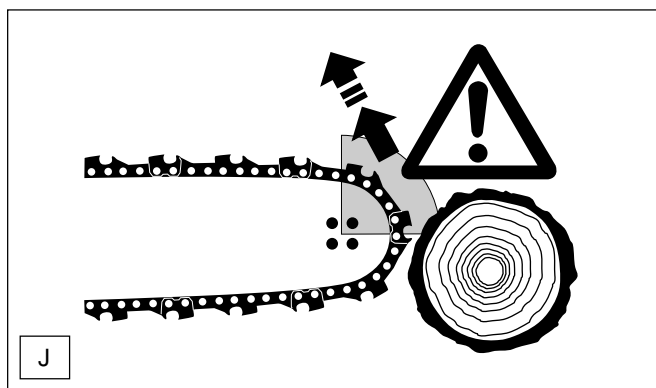
- The tension of the chain is correct if the chain rests against the bottom side of the guide bar and can still be easily turned by hand.
- While doing so the chain brake must be released.
- Check the chain tension in short intervals because new chains tend to elongate.
- When checking the chain tension the engine must be switched off.

NOTE:

It is recommended to use 2-3 chains alternatively.

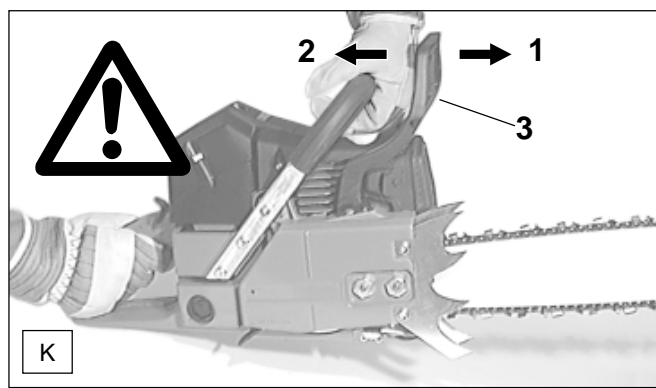
In order to guarantee a uniform wear of the guide bar the bar should be turned over whenever replacing the chain.

Chain brake



The DCS 9010 comes with an inertia chain brake as standard equipment. If kickback occurs due to contact of the guide-bar tip with wood (see SAFETY PRECAUTIONS, page 9), the chain brake will stop the chain through inertia if the kickback is sufficiently strong. The chain will stop within a fraction of a second.

The chain brake is installed to block the saw chain before starting it and to stop it immediately in case of an emergency.



Actuating the chain brake (blocking)

If the kickback is strong enough the sudden acceleration of the guide bar combined with the inertia of the hand guard (K/3) will **automatically** actuate the chain brake.

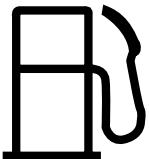
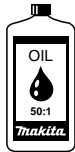
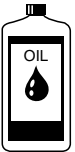
When actuating the chain brake **manually**, press the hand guard (K/3) with your left hand in the direction of the guide bar end (arrow 1).

Releasing the chain brake

Pull the hand guard (K/3) in the direction of the tubular handle (arrow 2) until it will engage noticeably. Now the chain brake is released.

Fuels / Refuelling



Fuel		50:1	40:1
	+		
1.0 Us-gal. (3.7 l)		2.5 floz. (75 cm ³)	3.2 floz. (94 cm ³)
2.5 Us-gal. (9.4 l)		6.4 floz. (189 cm ³)	8.0 floz. (236 cm ³)
5.0 Us-gal. (18.9 l)		12.8 floz. (378 cm ³)	16.0 floz. (473 cm ³)

CAUTION: This saw is powered by mineral-oil products (gasoline (petrol) and oil). Be especially careful when handling gasoline (petrol). Avoid all flame or fire. Do not smoke (explosion hazard).

Fuel mixture

The engine of the chain saw is a high-efficiency two-stroke engine. It runs on a mixture of gasoline and two-stroke engine oil.

The engine is designed for unleaded regular gasoline with a min. octane value of 91 ROZ. In case no such fuel is available, you can use fuel with a higher octane value. This will not affect the engine.

In order to obtain an optimum engine output and to protect your health and the environment use unleaded fuel only. Gasoline which contains alcohol should not be used in MAKITA products.

For lubricating the engine use a two-stroke engine oil (quality grade: TC-3), which is added to the fuel. The engine has been designed for use of MAKITA high-performance two-stroke engine oil and a mixture ratio of only 50:1 to protect the environment. In addition, a long service life and reliable operation with a minimum emission of exhaust gases are ensured. MAKITA high-performance two-stroke engine oil is available in the following sizes to suit your individual requirements:

- 1 l order number 980 008 607
- 100 ml order number 980 008 606

If MAKITA high-performance two-stroke engine oil is not available, we urgently recommend a mixture ratio of 40:1 with other two-stroke engine oils, as otherwise optimum operation of the engine cannot be guaranteed.

The correct mixture ratio:

- 50:1** when using MAKITA high-performance two-stroke engine oil, i. e. mix 50 parts gasoline with 1 part oil.
- 40:1** when using other two-stroke engine oils, i. e. mix 40 parts gasoline with 1 part oil.

NOTE:

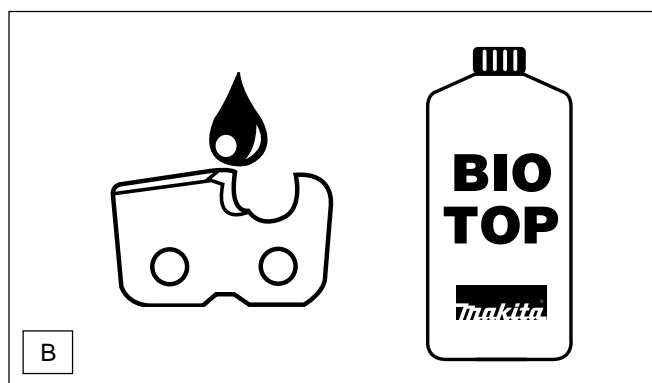
For preparing the fuel-oil mixture first mix the entire oil quantity with half of the fuel required, then add the remaining fuel. Shake the mixture thoroughly before pouring it into the tank.

It is not wise to add more engine oil than specified to ensure safe operation. This will only result in a higher production of combustion residues which will pollute the environment and clog the exhaust channel in the cylinder as well as the muffler. In addition, fuel consumption will rise and performance will decrease.

Storage:

Fuel cannot be stored for an unlimited period of time. Buy only as much as will be consumed in 4 weeks.

Use only approved and marked containers for transport and storage.



Chain oil

Use an oil with adhesive additive for lubricating the chain and guide bar. The adhesive additive prevents the oil from being flung off the chain too quickly.

We recommend the use of chain oil which is bio-degradable in order to protect the environment. The use of bio-degradable oil may even be required by local regulations.

The chain oil BIOTOP sold by MAKITA is made of special vegetable oils and is 100% bio-degradable. BIOTOP has been granted the "blue angel" (Blauer Umweltschutz-Engel) for being particularly environment-friendly (RAL UZ 48).

BIOTOP chain oil is available in the following sizes:

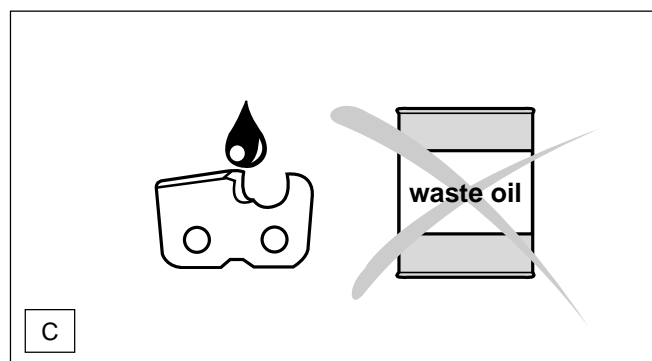
- 1 l order number 980 008 610
- 5 l order number 980 008 611
- 20 l order number 980 008 613

Bio-degradable oil is stable only for a limited period of time. It should be used within 2 years from the date of manufacture (printed on the container).

Important note on bio-degradable chain oils:

If you are not planning to use the saw again for an extended period of time, empty the oil tank and put in a small amount of regular **engine oil** (SAE 30), and then run the saw for a time. This is necessary to flush out all remaining bio-degradable oil from the oil tank, oil-feed system, chain and guide bar, as many such oils tend to leave sticky residues over time, which can cause damage to the oil pump or other parts.

The next time you use the saw, fill the tank with BIOTOP chain oil again.



NEVER USE WASTE OIL

Waste oil is very dangerous for the environment.

Waste oil contains high amounts of carcinogenic substances. Residues in waste oil result in a high degree of wear and tear at the oil pump and the sawing device.

In case of damage caused by using waste oil or inappropriate chain oil the product guarantee will be null and void.

Your salesman will inform you about the use of chain oil.

AVOID SKIN AND EYE CONTACT



Mineral oil products as well as oils degrease your skin. If your skin comes in contact with these substances repeatedly and for a longer period of time, it will desiccate. Various skin diseases may result. In addition, allergic reactions are known.

Eyes can be irritated by contact with oil. If oil comes into your eyes, immediately wash them with clear water.

If your eyes are still irritated, see a doctor immediately!

Refuelling



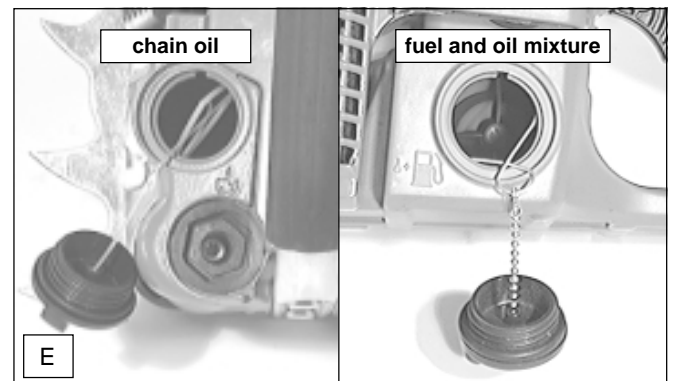
FOLLOW THE SAFETY PRECAUTIONS

Be careful and cautious when handling fuels.

The engine must be switched off.

- Thoroughly clean the tanks around the screw caps to prevent dirt from entering the fuel or oil tank.
- Unscrew the cap and fill in fuel or chain oil until it reaches the bottom edge of the filler socket. Be careful when refilling. Do not spill fuel or oil.
- Tightly screw on the cap.

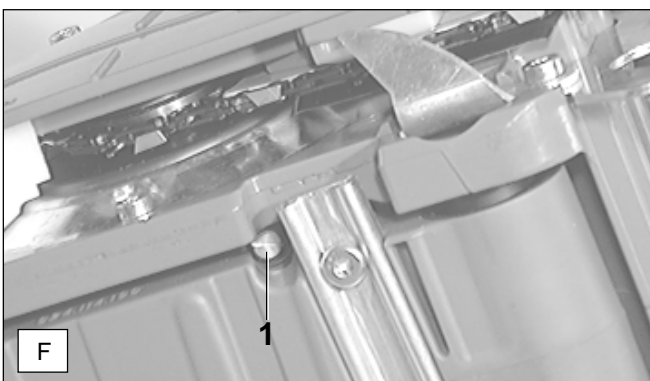
Clean screw cap and tank after refuelling.



Lubricating the chain

In order to ensure sufficient lubrication of the chain there must always be enough oil in the tank. Its contents is sufficient for approx. 1/2 hour of continuous operation.

Adjusting the chain lubrication



The engine must be switched off.

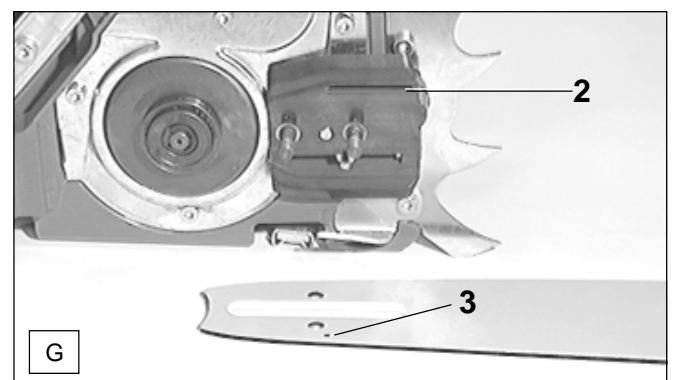


The oil pump can be regulated with the adjusting screw (F/1). The adjusting screw is mounted on the bottom side of the casing.

The oil pump has been adjusted to a medium feed quantity by MAKITA.

For changing the feed quantity use the universal wrench and adjust the adjusting screw (F/1) in the following way:

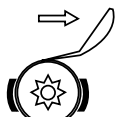
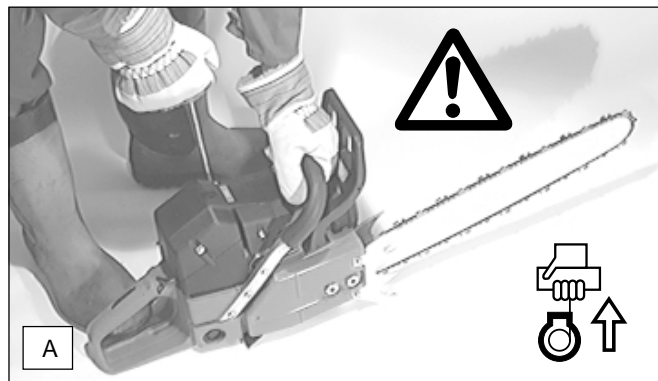
- turn to the right to reduce the quantity
- turn to the left to increase the quantity.



To guarantee a troublefree operation of the oil pump the oil guide groove at the crank case (G/2) and the oil inlet bore in the guide bar (G/3) must be cleaned regularly.

Note: After the saw has been turned off it is normal for residual chain oil to drip from the oil feed system, the guide bar and the chain for a time. This does not constitute a defect! Place the saw on a suitable surface.

Starting the engine

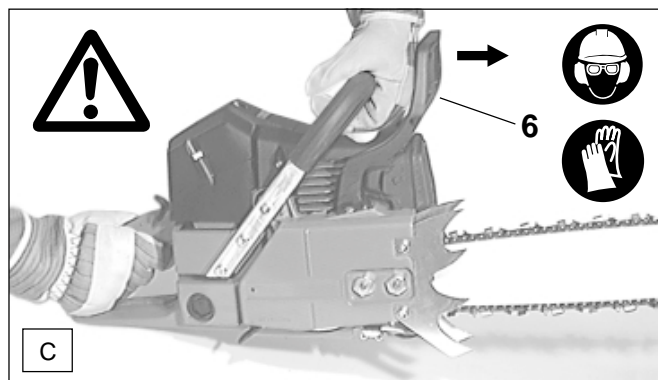


- Move at least 3m away from the place where you fuelled the saw.
- Ensure to have a safe footing and put the chain saw on the floor such that the sawing device is in contact with any object.
- Actuating the chain brake (blocking).
- Put the short-circuiting switch in position "I" (START) (B/1).
- Hold the tubular handle tightly with one hand and press the chain saw to the ground.
- Put your tip-toe in the back hand guard.

When working with a model equipped with a decompression valve observe the following:

- Press switch (B/6) before starting the engine.
- The valve will close automatically after ignition has taken place.

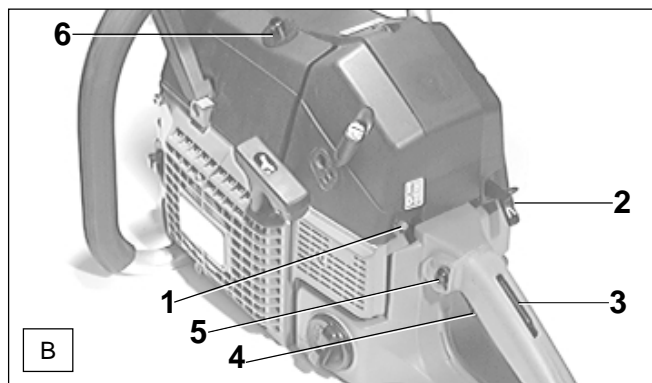
Checking the safety chain brake



Do not work with the chain saw without first checking the chain brake!

- Start the engine as described (make sure you have a good footing, and place the chain saw on the ground in such a way that the guide bar is free of contact).
- Grasp the tubular handle firmly with one hand and hold the grip with the other.
- With the engine running at moderate speed, press the hand guard (C/6) in the direction of the arrow with the back of your hand until the chain brake engages. The chain should stop immediately.
- Immediately release the throttle and release the chain brake.

IMPORTANT: If the chain does not stop immediately when you test the chain brake, do NOT use the chain saw. Take the chain saw to a MAKITA service center.



Cold start:

- Pull the choke (B/2).
- Press the safety switch (B/3).
- Press the throttle lever (B/4) and lock it with the stop button (B/5).
- Slowly pull out the starter cable until you notice a resistance (the piston is positioned before the top dead centre).
- Now pull out the starter cable with a fast and forceful movement until you hear a first ignition.

Attention: Do not pull out the starter cable more than approx. 50 cm and lead it back by hand.

- Press the choke (B/2) and again pull the starter cable. As soon as the engine will run, touch the throttle lever (B/4) to disengage the stop button (B/5).

Attention: As soon as the engine is started it must run without any load to prevent the chain brake from being damaged.

- Now release the chain brake.



Warm start:

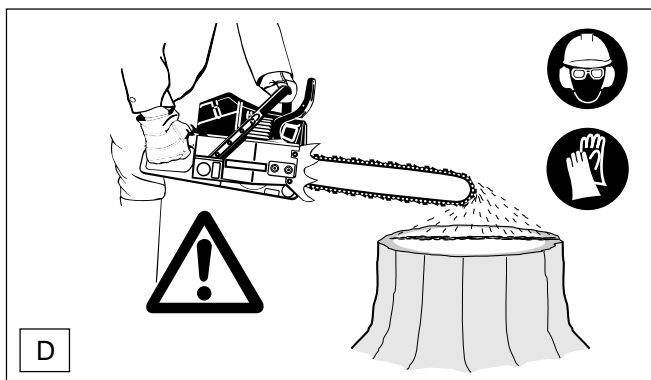
- As described in the section above (cold start), but without actuating the choke (B/2).

Switching off the engine



- Put the short-circuiting switch (B/1) in position "O" (STOP).

Checking the chain lubrication



Never work with the chain saw when a sufficient chain lubrication is not guaranteed. Otherwise the service life of the sawing device will be reduced.

Before starting work check the oil level in the tank and the oil feeding.

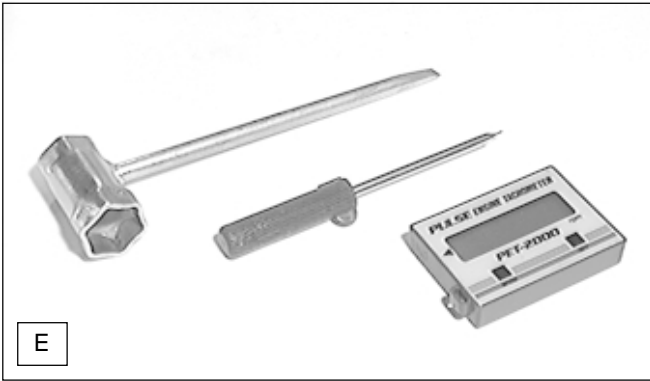
Check the oil feed quantity as described below:

- Start the chain saw.
- Hold the running chain saw approx. 6" (15 cm) above a trunk or the ground (use an appropriate base).

If the lubrication is sufficient, you will see a light oil trace because oil will be centrifuged from the sawing device.

Pay attention to the direction the wind is blowing and avoid unnecessary exposure to the oil spray!

Adjusting the carburetor



Important information:

The carburetor of this tool is fitted with limiter caps which restrict the range of adjustment and prevents over-rich mixture settings. This ensures providing good engine power and efficient fuel consumption.

Before installing the limiter caps, the manufacturer performs the „Basic Adjustment“ procedure.

Caution:

An optimum output can only be achieved if the carburetor is adjusted correctly. For this work, which should be carried out by an expert, the engine must be warmed up and the air filter clean.

The carburetor has been adjusted by MAKITA on the basis of atmospheric pressure conditions at sea level. Other atmospheric pressure conditions or the running-in process of a new engine may require to readjust the carburetor.

It is urgently recommended to use a revolution indicator (order number 950 233 210) in order to achieve a correct adjustment of the carburetor. Use the carburetor screw driver and the universal wrench delivered with the chain saw.

Before adjusting the carburetor the engine must be warmed up for a period of 3-5 min.



Working in winter

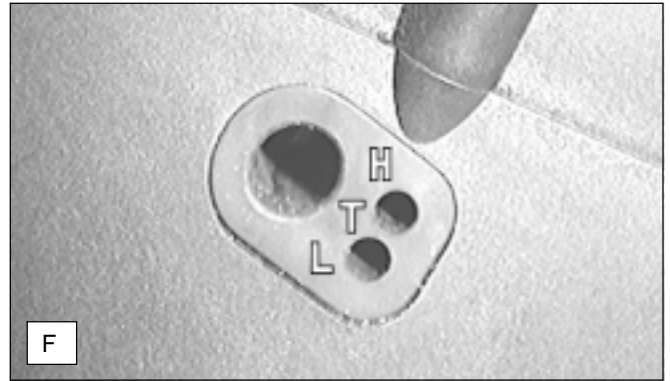


In order to prevent carburetor icing in winter, warm air can be led from the cylinder to the carburetor.

- Use the universal wrench to turn the button (G/1) completely to the right.
- Now the carburetor heating is actuated.

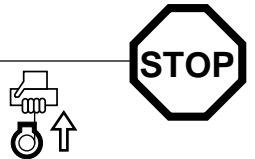
If the temperature is above 0° C, the carburetor heating must be switched off.

Not following this instruction may result in damage at the cylinder and piston.



For adjusting the carburetor correctly the following steps must be carried out:

1. Check adjustment
2. Start engine
3. Set idle speed
4. Adjust speed
5. Check idling speed
6. Check acceleration
7. Check max. speed or output
8. Repeat adjustment procedure starting with step 3, until idling speed, max. speed and acceleration are reached with the adjustment made.



Adjustment instructions (step 1)



- Before initial operation make sure that the adjusting screws (H and L) have not been set in all the way. Limiter caps do not protect the engine from leaning.
- Turn the two adjusting screws (H and L) counter-clockwise as far as they will go.
- Start the engine and let it warm up (step 2).



Set idle speed (step 3)

- If the chain turns when the engine is idling, unscrew the throttle-valve stop screw (T) until the chain stops. If the engine runs unevenly, screw the screw (T) back in.
- Idling speed should be 2,200 rpm.

Adjust speed (output) (step 4)

- Adjust the speed by adjusting the main jet screw (H) to 13,500 rpm.

Caution:

The DCS 9010 is equipped with a speed limiting electronic ignition system. Speeds of more than 13,500 1/min cannot be achieved, not even by reducing the amount of fuel in the mixture.

Check idle speed (step 5)

- After having adjusted the max. speed ensure the idle speed is set to 2,200 rpm. (the chain must not turn). Use the idle jet screw (L) to regulate it. Turn in the screw (L) to speed up, and turn out the screw (L) to speed down the engine.

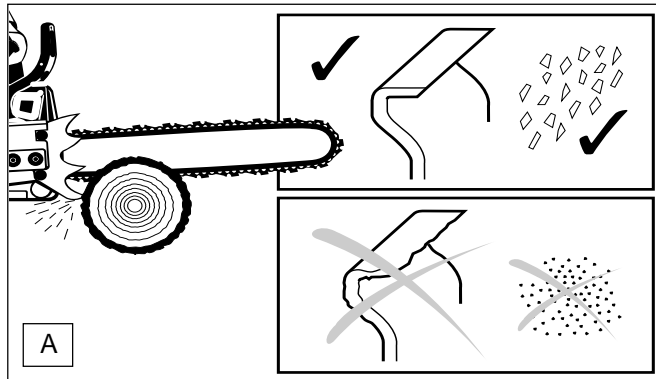
Check acceleration (step 6)

- Now check the acceleration, i. e. the time necessary for speeding up from idle speed to max. speed. To do this, press the throttle lever hard.
- If the acceleration is too low, turn out the idle jet screw (L) approx. 1/8 rotation.

MAINTENANCE

Sharpening the saw chain

CAUTION: Before doing any work on the guide bar or chain, always switch off the engine and pull the plug cap off the spark plug (see "Replacing the spark plug"). Always wear protective gloves!



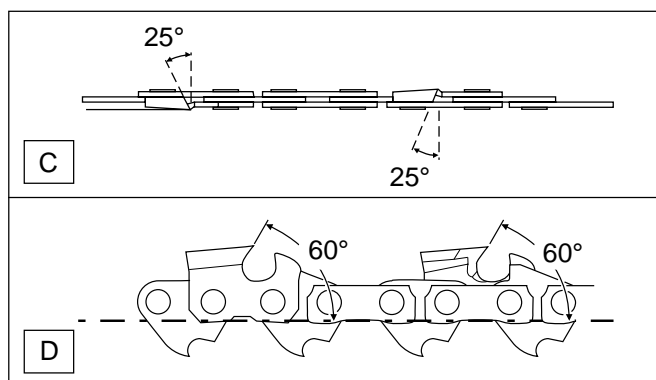
The chain needs sharpening when:

- The sawdust produced when sawing humid wood looks like wood flour.
- The chain penetrates the wood only under great pressure.
- The cutting edge is visibly damaged.
- The sawing device is pulled to the left or right when sawing. This is caused by an unequal sharpening of the chain.

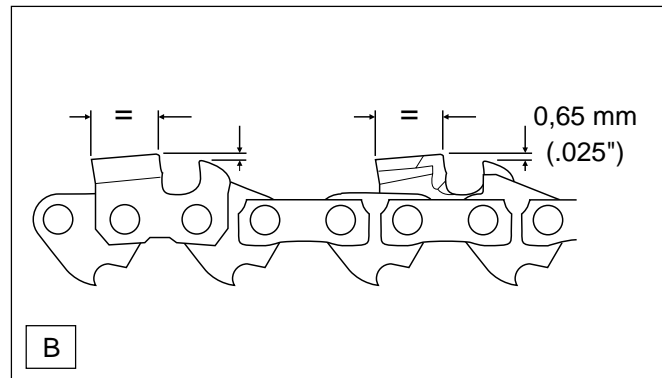
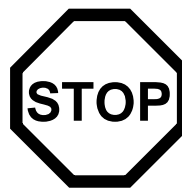
Important: Sharpen regularly, but only slightly.

Generally 2-3 touches are enough.

Have the chain resharpened in a service center when you have already sharpened it yourself several times.



- The sharpening angle of 25° must be equal for all cutters. Different angles result in a roughly, irregularly running chain, increase wear and tear and cause chain ruptures.
- The front rake of 60° depends on the cut depth of the round file. If the file to be used is guided correctly, the correct front rake results automatically.

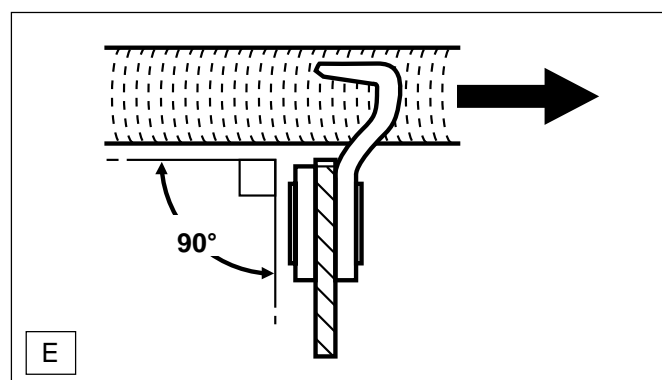
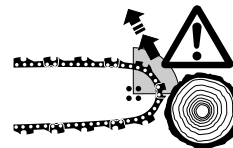


Characteristics of a correctly sharpened chain (type 099):

- All cutters must be of the same length (=). Cutters with different lengths result in a rough running of the chain and produce cracks in the chain.
- The best cutting results are achieved with a depth limiter distance of 0.65 mm (.025"). The distance between the depth limiter and the cutting edge determines the depth of the cut.

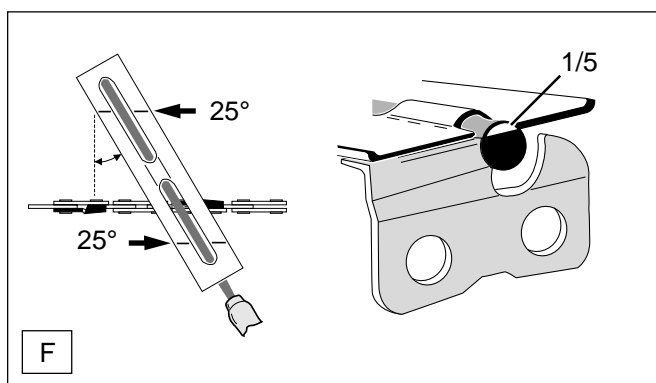
CAUTION:

If the distance is too wide, the risk of kickbacks increases.



Files and how to work with them

- Sharpen using a special file holder with a saw chain round file. Normal round files are not appropriate for this work. See "Accessories" for the order number.
- File the first cutter half with a 7/32" (5,5 mm) dia. round file, then switch to a 3/16" (4,8 mm) dia. file.
- The file should cut only when pushed forwards (arrow). Lift the file when leading it backwards.
- First sharpen the shortest cutter. The length of this cutter is then the nominal value for all other cutters of the chain.
- Replaced cutters must be exactly adopted to the shape of the other cutters. This is also true for the depth gauges.
- Always guide the file horizontally (90° to the guide bar).



- The file holder makes it easier to guide the file, carries markings for a correct sharpening angle of 25° and limits the cut depth (4/5 of the file diameter). For the order number see accessories.
- When filing the markings must be parallel to the chain.

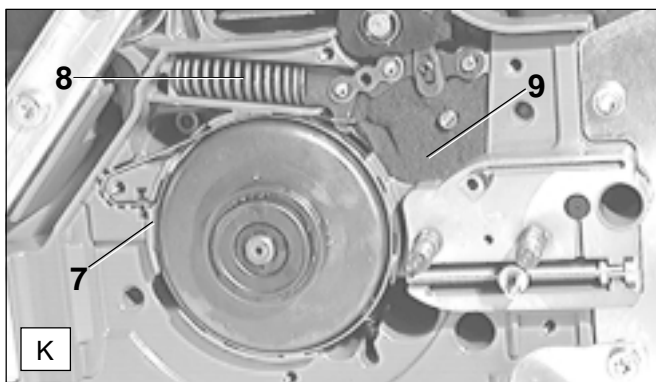
Cleaning the guide bar

CAUTION:

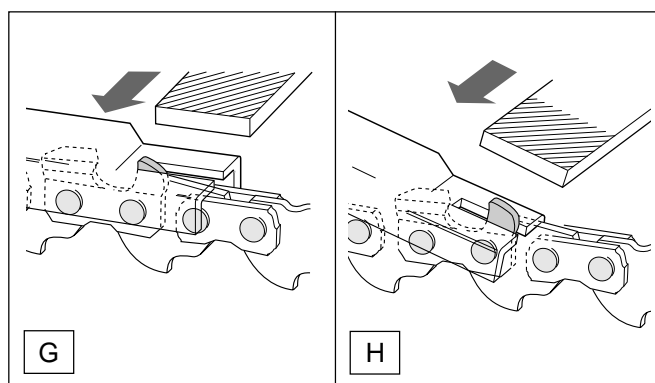
Protective gloves must be put on.



The bearing surfaces of the guide bar must be regularly cleaned and checked for damage.



- Clean the inside, in particular the brake band area (K/7), with a brush.
- NOTE:** Do not clean the brake mechanism, in particular the spring (K/8), because it could jump out of its guide.
- NOTE:** Do not remove the foam material (K/9).
- Remount the protective plate and the guide plate.
- After mounting carry out a functional check of the chain brake (see page 22).



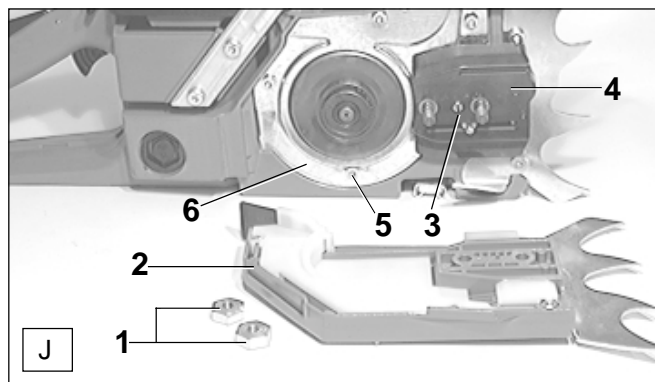
- After having sharpened the chain, the height of the depth limiter must be checked by means of a chain gauge. For the order number see accessories.
- Correct even the smallest projections with a special flat file (G).
- Round off the front of the depth limiter (H).

Clean the chain brake band

CAUTION: In any case actuate the

chain brake (blocking) and put on protective

gloves. Do not actuate the chain brake when cleaning.



- Loosen the fastening nuts (J/1).
- Pull off the sprocket guard (J/2).
- Loosen the screw (J/3) and remove the guide plate (J/4).
- Loosen the four screws (J/5) and **carefully** remove the protective plate (J/6).

NOTE: Ensure the pressure spring (K/8) cannot jump out. Secure the pressure spring in position before cleaning.



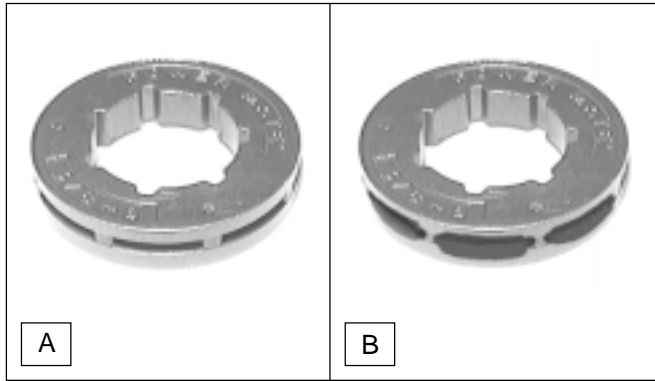
SERVICE

NOTE:

The chain brake is a very important safety device and like any other component subject to normal wear and tear.

It is recommended to have it checked and maintained regularly for your own safety by a MAKITA service center.

Checking the sprocket

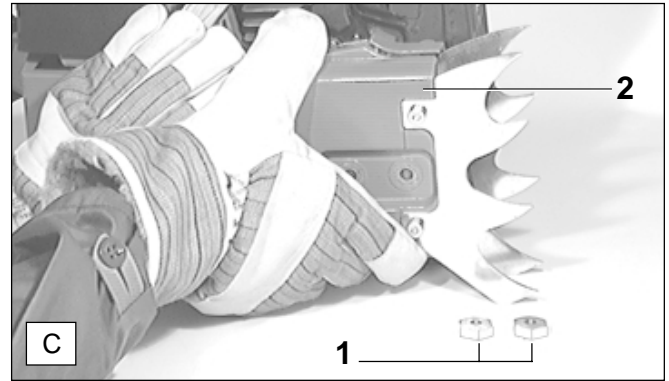


Check the sprocket before mounting a new chain (A).
Worn out sprockets (more than 0,2 mm) (B) may damage the new chain and must therefore be replaced.

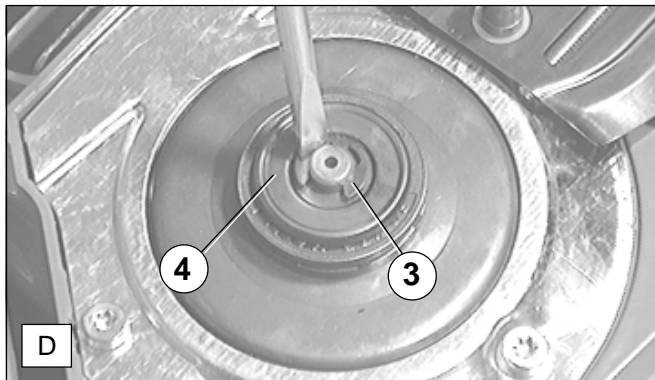
Replacing the sprocket



CAUTION:
Protective gloves must be put on.



- Loosen the fastening nuts (C/1).
- Pull off the sprocket guard (C/2).

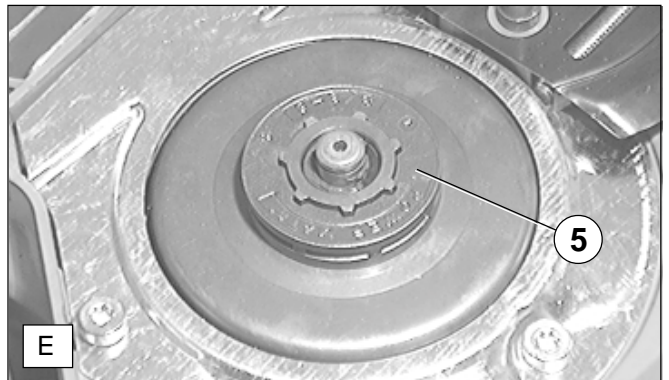


- Use the universal wrench to remove the locking washer (D/3).

CAUTION:

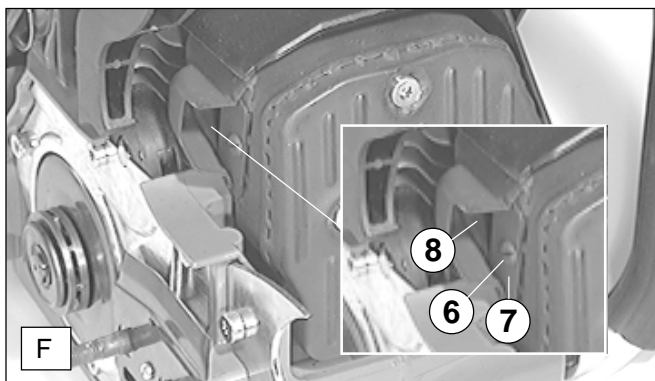
The locking washer might jump out on removing.

- Remove the thrust washer (D/4) underneath it.



- Take off the sprocket (E/5) from the clutch drum.
- Position the new, slightly oiled sprocket and remount all parts in the reverse order.

Replacing/cleaning the spark arrester screen

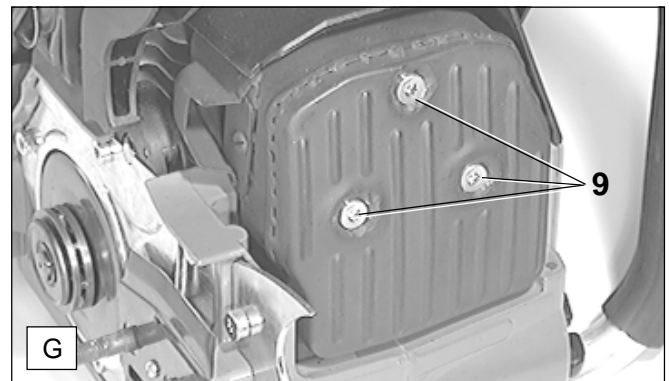


The spark arrester screen should be checked and cleaned regularly.

- Remove the screw (F/6), deflector plate (F/7) and arrester screen (F/8).

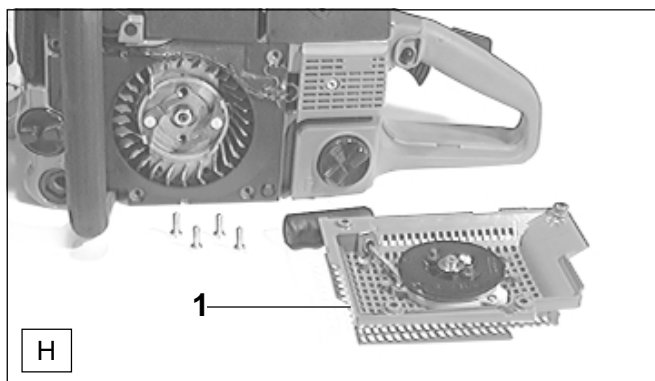
Caution: Do not use sharp or pointed objects for screen cleaning. Damaged or misformed screen wires may result.

Checking the muffler screws

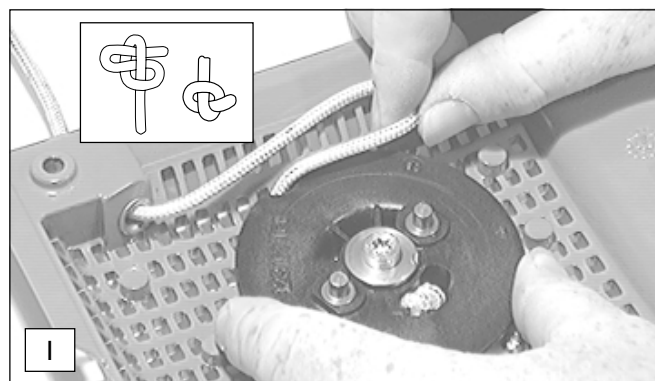


- Regularly check the three fastening screws (G/9) for tightness.

Replacing the starter cable



- Demount the fan housing (H/1) (4 screws).
- The cable drum must not be demounted.
- Remove the old cable.
- Mount the new cable 0.16" x 40" (ø 4x1000 mm) and tie it up in a **simple** knot in the drum, and in a knot **with a loop** in the starter grip. The end of the cable must not project the drum.

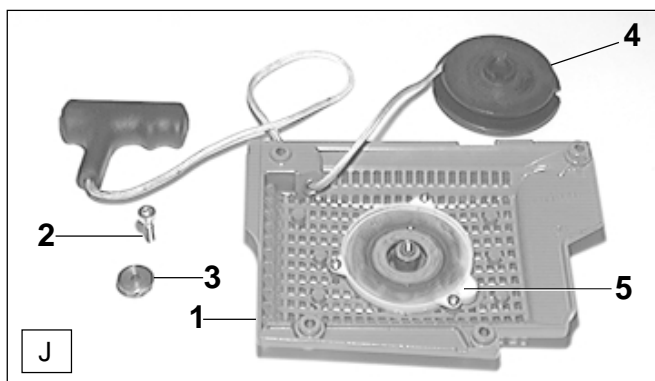


- Wind the cable around the drum as far as possible. Then pull the cable with the starter grip approx. 20" (50 cm) out of the drum, hold the drum tightly and wind the cable once again around the drum.
- Release the drum and let the cable wind up by means of the spring tension. The starter grip must now stand upright at the outside of the starter casing.

NOTE:

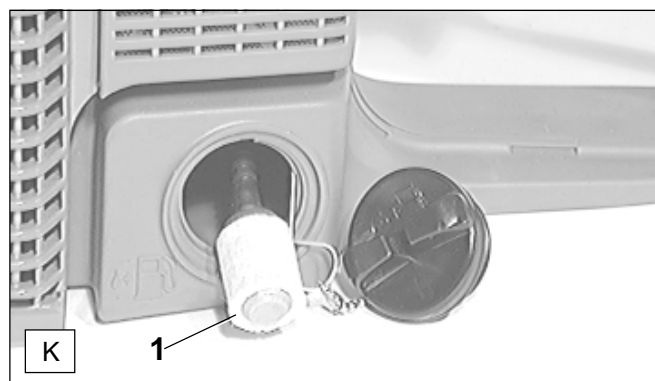
When the starter cable has been completely pulled out, it must be possible to turn the cable drum against the spring tension through 1/4 rotation.

Replacing the return spring



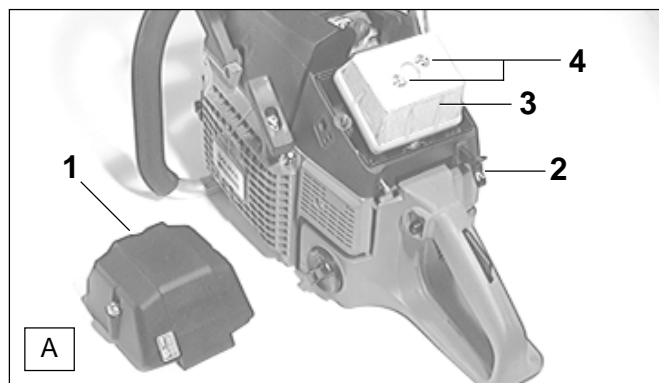
- Demount the fan housing (J/1).
- Loosen the screw with the star-shaped recess (J/2) on the pivot.
- Pull off the pivot (J/3).
- Remove the cable drum (J/4).
- Demount the spring cover (J/5) (3 screws).
- Slightly knock the hollow side of the fan housing on wood while holding it tightly. Thus the old spring will jump out and release.
- The new spring is delivered in a box, under full tension. For mounting the whole box is pressed into the fan housing and the wire ring is stripped off (a spring which has jumped out is remounted by turning it clockwise into the housing).

Replacing the suction head

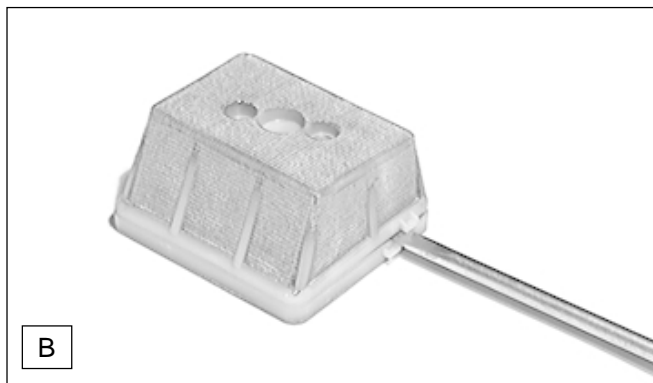


- Pull the suction head by means of a bent wire through the tank opening.
- The felt filter (K/1) of the suction head can be clogged.
- It is recommended to replace the suction head once every three months in order to guarantee an unimpeded fuel flow to the carburetor.

Cleaning the air filter



- Demount the filter cover (A/1) (2 screws).
Caution: Pull the choke (A/2) to shut the choke shutter and to prevent dirt particles from entering the carburetor.
- Loosen the two screws (A/4) and remove the air filter (A/3) from the intake stack.



- Position a screw driver between the two latches and separate the upper and lower part by turning it.
- Clean the air filter with a soft brush.
- If the filter is very dirty, clean it in lukewarm soapsuds with standard detergent.
- Let the air filter **dry completely**.
- Assemble the upper and lower part and put them on the intake stack. Firmly tighten the screws (A/4).

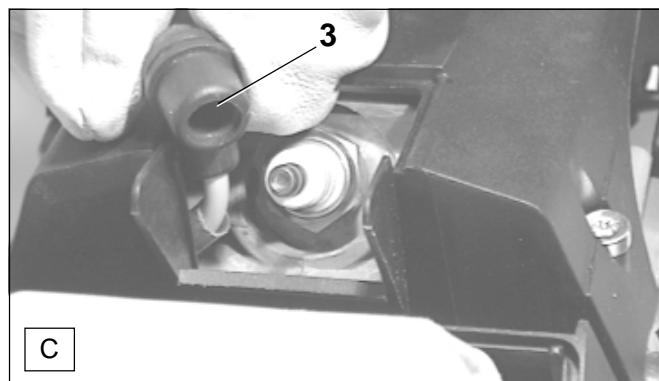
If the filter is very dirty, clean it frequently (several times a day), because only a clean air filter guarantees full engine power.

CAUTION:

Replace damaged air filters immediately.

Torn off pieces of cloth may destruct the engine.

Replacing the spark plug



CAUTION:

Do not touch the spark plug or plug cap if the engine is running (high voltage).

Switch off the engine before starting any maintenance work.

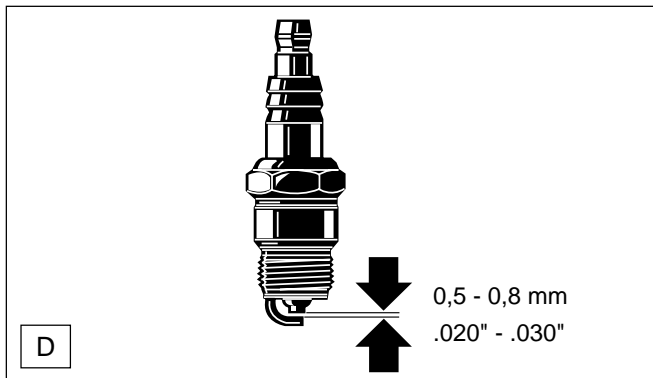
A hot engine can cause burns. Wear protective gloves!

The spark plug must be replaced in case of a damage of the insulating body, consumption of the electrodes or if the electrodes are very dirty or oily.

- Loosen both screws of the filter cover (A/1) and remove the filter cover (see fig. clean air filter).
- Pull off the plug cap (C/3) from the spark plug. Only use the universal wrench delivered with the chain saw for demounting.
- Mount the new spark plug in the reverse order.

CAUTION: Use only the following spark plugs:

- **NGK BPMR 7A** or **BOSCH WSR 6F**.



Electrode gap

The electrode gap must be .020"-.030" (0,5 - 0,8 mm).

Checking the ignition spark

- Press the loosened spark plug with the firmly connected ignition cable against the cylinder by means of insulated pliers (not near the spark plug opening).
- ON/OFF switch in START position "I".
- Start the engine by forcefully pulling out the starter cable.

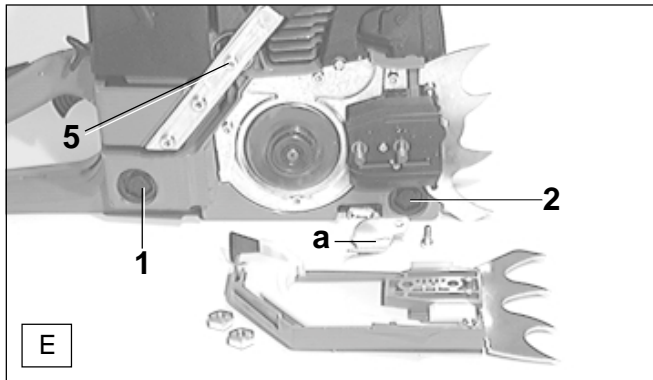
If the function is correct, an ignition spark must be visible near the electrodes.

Replacing the vibration dampers

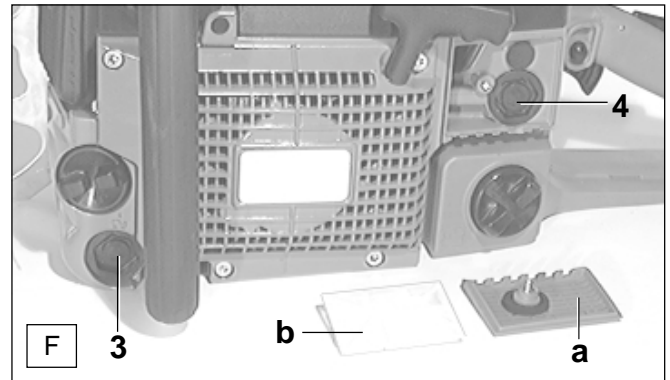
CAUTION:

Protective gloves must be put on.

Always replace all five vibration dampers.

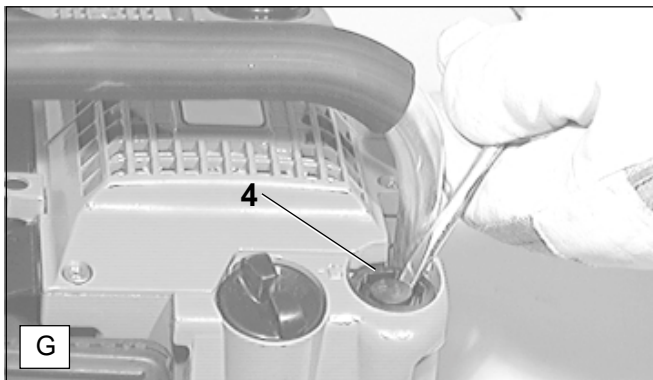


- The vibration damper (E/1) is installed next to the identification plate.
- The vibration damper (E/2) is installed underneath the guide bar support. The chain catch (a) must be removed.
- The vibration damper (E/5) is installed under the mounting arm of the tubular handle.

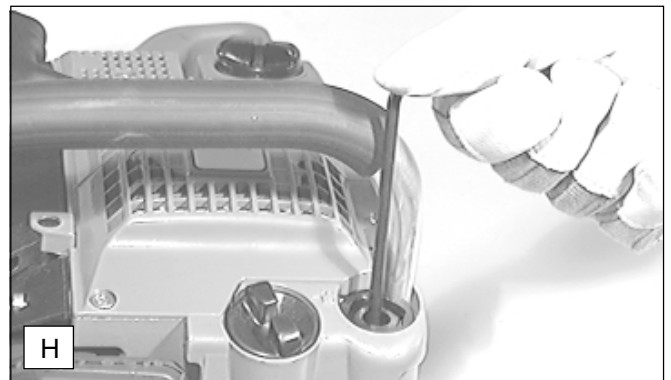


- The vibration damper (F/3) is installed underneath the oil tank cap.
- The vibration damper (F/4) is installed underneath the pre-filter. The cover (a) and pre-filter (b) must be removed.

Replacing vibration dampers 1 - 4

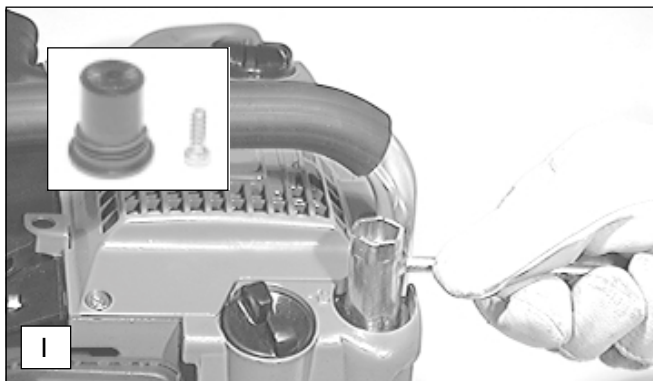


- Put the saw chain on its side and carefully remove the protective cover (G/4) by means of the universal wrench.

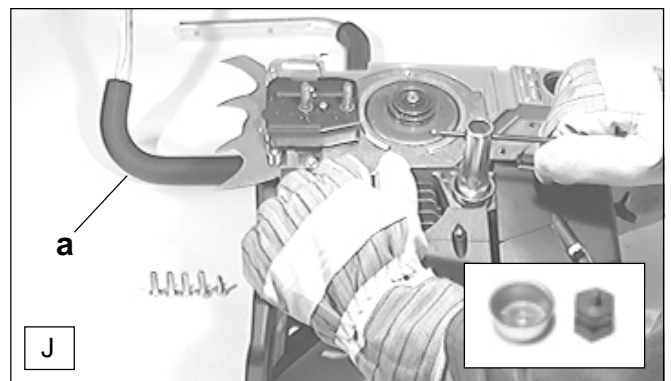


- Use the offset screw driver to loosen the screw inside.

Replacing vibration damper 5



- Carefully demount the vibration damper by means of the universal wrench.
- The vibration damper is mounted in the reverse order.



- Demount the tubular handle (a) (5 screws).
- Use the socket wrench (accessories, not delivered with the chain saw) to demount the vibration damper carefully.
- The new vibration damper is mounted in the reverse order.

Instructions for daily and periodic maintenance

To ensure long life, prevent damage and ensure the full functioning of the safety features the following maintenance must be performed regularly. Guarantee claims can be recognized only if this work is performed regularly and properly. Failure to perform the prescribed maintenance work can lead to accidents!

Perform the following servicing work daily after use. Make a habit of it, it does not require much time and your saw will always function properly.

Possibly hidden faults can be detected in this manner before causing expensive and annoying interruptions of your work. In case you should detect a fault in the safety equipment when performing daily servicing, the saw must not be used before elimination of the fault.

The user of the chain saw must not perform maintenance work which is not described in the Owner's Manual. All such work must be carried out by a MAKITA service center.

			Page
General work	Chain saw	Clean the outside and check for damage. In case of any damage have it immediately repaired by a service center.	26
	Sprocket Chain brake	Replace in time. Have it regularly checked by a service center.	
Before each start	Chain	Check for damage and sharpness. Resharpen regularly, replace in time. Check the chain tension.	24-25 19
	Guide bar	Check for damage.	21-22 22
	Chain lubrication	Functional check.	
	Chain brake	Functional check.	22 21
	ON/OFF switch, Safety locking button Throttle lever	Functional check.	
	Fuel/oil tank plug	Check for tightness.	
Every day	Air filter	Clean.	28
	Guide bar	Check for damage, clean oil intake bore. Turn it over so that the bearing surfaces are equally worn. Replace in time.	21
	Guide bar support Idling speed	Clean, in particular the oil guide groove. Check (chain must not run).	25 23
Every week	Fan housing	Clean to ensure a perfect cooling air supply. For this the fan housing must be demounted.	27
	Carburetor interior and cylinder ribs	Clean, for this demount cover and protective cover.	25 28
	Chain brake	Clean the brake band (sawdust, oil)	
	Spark plug	Check and replace if necessary.	26
	Muffler	Tighten fastening screws, clean spark arrester screen	29
	Vibration damper Chain guide	Check. Check.	
Every 3 months	Suction head	Replace.	27
	Fuel/Oil tank	Clean.	
Annually	Chain saw	Check at an authorized service centre	
Storage	Guide bar/chain	Demount, clean and oil slightly. Clean the guide groove of the guide bar.	25
	Fuel/oil tank	Empty and clean.	
	Oil pump	Clean.	
	Carburetor	Run empty.	

Service, spare parts and guarantee

Maintenance and repair

The maintenance and repair work of modern engines as well as all safety related assemblies require qualified technical training and the availability of a workshop equipped with special tools and testing devices.

We therefore recommend you to consult a MAKITA service center for the performance of all work not described in this Owner's Manual.

The MAKITA service centers are provided with all the necessary equipment and skilled and experienced personnel to work out correct customer solutions and to advise you in all matters accordingly.

Please contact your nearest service center. Should you however not have an address for a MAKITA service center then please contact the MAKITA general trading company (see last page) who will gladly provide you with the address of your nearest MAKITA service center.

Spare parts

A reliable and continuous operation as well as the safety of your chain saw depend among others on the quality of the spare parts used. Use only original MAKITA parts, marked



Only original spare parts and accessories guarantee the highest quality in material, accuracy to size and function and safety.

Original spare parts and accessories can be obtained from your local dealer. He will also have the spare part lists to determine the required spare part numbers, and will be constantly informed about the latest improvements and also about spare part innovations. Please, take in mind that in case foreign spare parts are used instead of original MAKITA spare parts this will automatically invalidate the MAKITA product guarantee.

Guarantee

MAKITA guarantees the highest quality and will therefore reimburse all costs for mending through replacement of damaged parts as a result of material or production faults, which occur within the guarantee time after purchase.

Please, note that in some countries particular guarantee conditions may exist. In case of any doubts, please, contact your salesman who is responsible for the guarantee of a product.

We ask for your understanding that we cannot accept any responsibility for damage caused by:

- Disregard of the Owner's Manual.
- Non-performance of the required maintenance and cleaning instructions.
- Wrong carburetor adjustment.
- Normal wear and tear.
- Obvious overload due to permanent excess of the upper limits of capacity.
- Use of guide bars and chains which have not been approved.
- Use of guide bar and chain lengths which have not been approved.
- Use of force, improper use, misuse or accidents.
- Overheating due to dirt on the cylinder ribs and the fan housing.
- Works on the chain saw by unskilled persons or performance of inappropriate repairs.
- Use of unsuitable spare parts or parts which are not original MAKITA parts, as far as they have caused the damage.
- Use of unsuitable or old oil.
- Not tightening external screw connections in time.
- Damage related to conditions arising from lease or rent contracts.

Cleaning, servicing and adjustment works are not covered by the guarantee. All repairs covered by the guarantee are to be performed by a MAKITA service center.

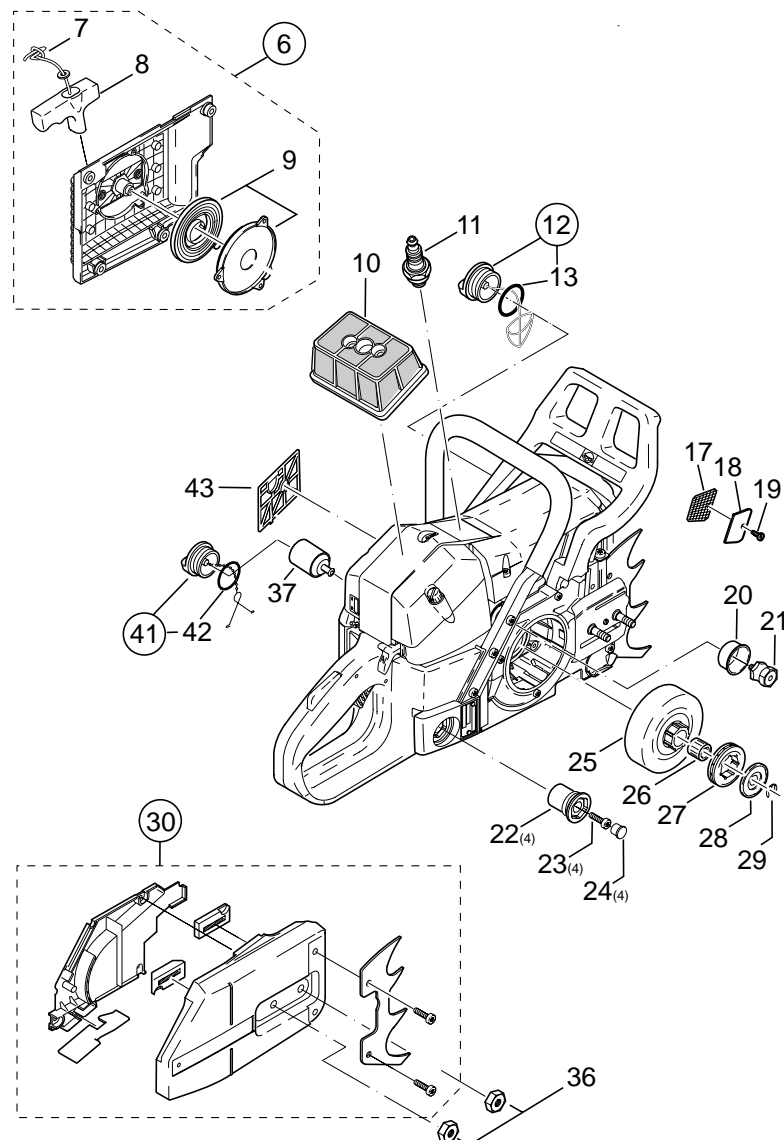
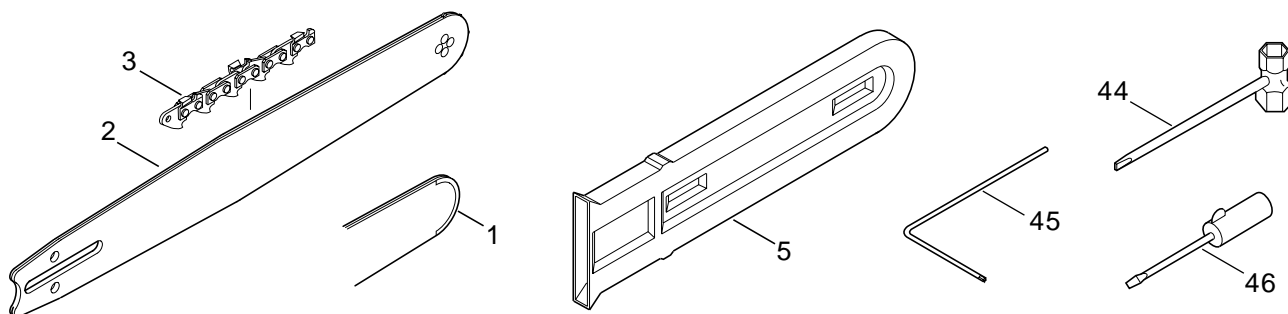
Troubleshooting

Malfunction	System	Observation	Cause
Chain does not run	Chain brake	Engine runs	Chain brake actuated.
Engine does not start or only with difficulties	Ignition system	Ignition spark No ignition spark	Malfunction in fuel supply system, compression system, mechanical malfunction. STOP switch actuated, malfunction or short circuit in cabling, plug cap, spark plug or ignition module defective. Choke in wrong position, carburetor defective, suction head dirty, fuel line bent or interrupted. Cylinder base packing ring defective, radial shaft packings defective, cylinder or piston defective Spark plug does not seal. Spring in starter broken, broken parts inside the engine.
rings	Fuel supply	Fuel tank is filled	
	Compression system	Inside	
	Mechanical malfunction	Outside Starter does not engage	
Warm start difficulties	Carburetor	Fuel tank is filled Ignition spark	Wrong carburetor adjustment.
Engine starts, but dies immediately	Fuel supply	Fuel tank is filled	Wrong idling adjustment, suction head or carburetor dirty. Tank venting defective, fuel line interrupted, cable defective, STOP switch defective, starting valve dirty.
Insufficient output	Several systems may be involved simultaneously	Engine is idling	Air filter dirty, wrong carburetor adjustment, muffler clogged, exhaust channel in cylinder clogged, spark arrester screen clogged.
No chain lubrication	Oil tank/pump	No oil on the chain	Oil tank empty. Oil guide groove dirty.

Extract from the spare parts list

Use original MAKITA spare parts only. For performance of repairs and replacement of other parts your MAKITA service center should be consulted.

DCS 9010



Pos.	MAKITA No.	Qty.	Denomination
1	443 050 452	1	Solid nose bar 50 cm (20")
	443 060 452	1	Solid nose bar 60 cm (24")
	443 074 452	1	Solid nose bar 74 cm (29")
2	443 050 652	1	Sprocket nose bar 50 cm (20")
	443 060 652	1	Sprocket nose bar 60 cm (24")
3	528 099 672	1	Saw chain 3/8" for 50 cm (20")
	528 099 680	1	Saw chain 3/8" for 60 cm (24")
	528 099 696	1	Saw chain 3/8" for 74 cm (29")
5	952 100 653	1	Chain protection, 20-24"
	952 100 171	1	Chain protection, 29"
6	024 112 630	1	Starter device cpl.
7	122 164 010	1	Starter cable
8	965 402 262	1	Starter grip
9	020 163 031	1	Return spring
10	024 173 230	1	Air filter (Robkoflok)
11	965 603 021	1	Spark plug
12	010 114 050	1	Oil tank cap cpl.
13	963 228 030	1	O-Ring
17	024 174 160	1	Spark arrester screen
18	024 174 171	1	Deflector plate
19	915 142 090	1	Self-tapping screw
20	965 551 250	1	Housing
21	965 403 430	1	Vibration damper
22	965 403 461	4	Vibration damper
23	913 455 204	4	Socket-head-screw
24	965 404 740	4	Plug
25	024 223 041	1	Clutch drum
26	962 210 024	1	Needle cage
27	119 224 070	1	Sprocket 3/8", Z=7
28	001 224 011	1	Thrust washer
29	927 308 000	1	Locking washer
30	024 213 670	1	Sprocket guard cpl.
36	923 208 004	2	Hexagonal nut
37	963 601 120	1	Suction head
41	965 451 901	1	Fuel tank cap cpl.
42	963 232 045	1	O-Ring
43	024 173 081	1	Pre-filter
44	941 719 171	1	Universal wrench
45	940 827 000	1	Angled screw driver
46	944 340 001	1	Carburetor screw driver

Accessories (not delivered with the chain saw)

50	953 100 071	1	Chain gauge
51	953 004 010	1	File handle
52	953 003 040	1	Round file 7/32" dia. (5,5 mm)
52	953 003 070	1	Round file 3/16" dia. (4,8 mm)
53	953 003 060	1	Flat file
54	953 009 000	1	File holder
			(with round file 7/32" (5,5 mm))
-	953 007 000	1	File block for guide bar
55	944 500 860	1	Screw driver
56	944 500 862	1	Screw driver 8" (200 mm)
57	944 500 861	1	Screw driver 4" (100 mm)
-	944 500 621	1	Socket wrench
			(for vibration damper)
-	949 000 031	1	Combined can
			(for 5l fuel, 2,5l chain oil)

